WORKBENCH

35c ICD January-February, 1963

Spinning Wheel

Colonial Chest-Desk

Oscillating Drum Sander

Working With Sheet Metal

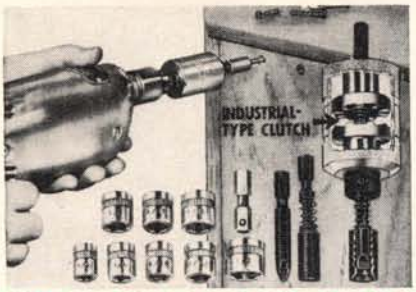
Flexible Dryer Vent

ARCO DRILL ATTACHMENTS ARCO

SAVE ON A WHOLE WORKSHOP OF THE LATEST TOOLS!

AND OTHER TOP TOOLS FOR HOME AND SHOP

"ARCO SCREW & NUT DRIVER"



A 15-piece Set of Industrial-Quality Tools.

The only combination screw & nut driving attachment! Fits **every** electric drill, drill press. Packs real power in screw, nut & bolt driving because of rugged, non-slip **Industrial-type Clutch. Special Bit Holders** prevent bits from slipping off screwheads to damage work or hurt operator's hand. No screwdriver attachment under $10 has these 2 important features—and with this outfit, you get a socket set, too! Includes 2 flat bits with bit-holders for No. 4-8 and No. 8-14 slotted screws, No. 2 Phillips bit, 6 hex socket wrenches, 2 square socket wrenches & socket wrench holder with ball-lock. 1-year guarantee. **No. 750** ..... ONLY $7.95

"ARCO SCREW-MATIC"

(For screwdriving only.) Same as above, less socket set. **No. 700**..... ONLY $5.95

"JIFFY" JIG-SAW

FITS ANY ELECTRIC DRILL in SECONDS!
Simply slip in drill chuck & it's ready to work.
CUTS ANY SHAPE, ANY MATERIAL!

"Jiffy" Jig-Saw has all the speed and capacity of high-priced Jig-Saws. Does 95% of the sawing jobs about the house or workshop! Cuts straight lines, intricate patterns and circles—however large—in wood, wallboard, plastics, metals — even **cuts 2x4's!** Air-Jet blows sawdust away from cutting line. Cuts openings without boring starting hole. 1-Year Guarantee. **No. 2500**—List Price **$9.95**..... SPECIAL ONLY $5.88

6 Extra Assorted Jig-Saw Blades for cutting woods, plastics, metals. No. 2005.....$1.95

"ARCO" Tools are available at your dealer or order direct POSTPAID on 20-day Money Back Guarantee.

MAIL THIS COUPON TODAY!

ARROW METAL PRODUCTS CO.
Dept. WB-I, 421 West 203rd St., N. Y. 34, N. Y.
Ship at once on your 20-day Money Back Guarantee:

- ☐ "ARCO SCREW & NUT DRIVER" No. 750..$ 7.95
- ☐ "ARCO SCREW-MATIC" No. 700..... 5.95
- ☐ "JIFFY" JIG-SAW No. 2500..... 5.88
- ☐ SIX JIFFY JIG-SAW BLADES No. 2005..... 1.95
- ☐ "ARCO ROTO-FORM" No. 1252..... 1.98
- ☐ ROTO-FORM 3-Piece Set No. 5500..... 3.95
- ☐ "ARCO SCREW-DRILL" Set of 4. No. 1140 3.69
- ☐ "ARCO HOLE-SAW" No. 650..... 7.95
- ☐ "ARCO HOLE-SAW" No. 652..... 11.95
- ☐ "ARCO ROUTER-DRILL" No. 1160..... 1.39
- ☐ "ARCO-SAW" No. 460..... 12.95
- ☐ 5-Piece ROTARY FILE SET No. 5700..... 4.50
- ☐ "ARCO DOWEL CENTERS" No. 584..... 1.00
- ☐ "ARCO 2-Speed ANGLE-DRIVE" No. 350.... 4.95

☐ I enclose Check, M.O. — SHIP POSTPAID.
☐ Ship C.O.D. (no orders under $6)—plus postage.

Name.....

Address.....

City.....Zone.....State.....

"ARCO ROTO-FORM"

SHAPES
CUTS
FORMS
MILLS

Fits any electric drill, drill press. Saves hours of work shaping contours, removing paint, planing, sanding, beveling, model making. Cuts woods, metals, plastics, wallboard, etc. Quality-made in U.S.A. of hardened steel. Never clogs or needs sharpening. 1⅞" diameter with ¼" shank. Terrific Value. **No. 1252** ONLY $1.98

SAVE! Set of 3 Roto-Forms (1⅞" dia. drum above plus ¾" & 1¼" dia. drums). **No. 5500**.....$3.95

"ARCO Screw-Drills"

Adjusts for ANY Screw Length

SET OF 4 SIZES — No. 6, 8, 10, 12 FOR EVERY WOODSCREW

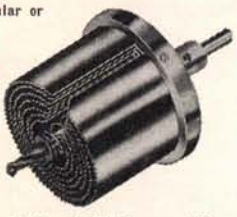
Drills Hole, Countersinks, Counterbores in 1 Operation

Set of 4 drills for all #6-8-10-12 woodscrews—flat, round, oval heads. Use with hand or elec. drills, drill press on woods, plastics, aluminum. 4-Pc. Set $3.69

"ARCO HOLE-SAW"

Now available with regular or

BRAND NEW EXTRA LONG SAWBLADES!



NEW HEAVY-DUTY DESIGN PERMITS CUTTING STEEL & ALL OTHER METALS WOOD, PLASTICS, WALLBOARD, etc.

Fits any Electric Drill, Lathe, Drill-Press or Motor.

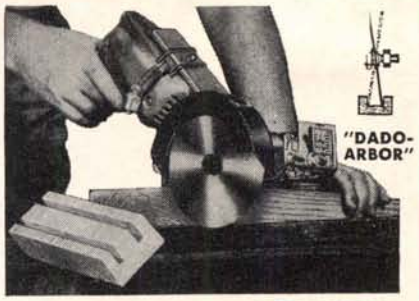
"Slug-Ejector" pops out discs immediately—therefore works 3-times faster than other makes! **7 highest quality Metal Cutting Blades** easily exchanged to cut 1", 1¼", 1½", 1¾", 2", 2¼" & 2½" holes thru ¾" **stock.** Including ¼" drill bit. **No. 650.** $7.95

No. 652—as above but with 2¼" **Extra Long Blades** to cut thru any 2" stock. Including ⅜" drill bit with ¼" shank..... 11.95

"ARCO ROUTER-DRILL"

SAWS • DRILLS • ROUTS • FILES

Fits any Electric Drill. Cuts own starting hole and any shape in any direction tool is moved. Cuts plywood, lumber, formica, non-ferrous metals, sheet steel. Quality-made in U.S.A. of hardened steel with sharp milled cutting edges. **No. 1160**..... ONLY $1.39



"ARCO-SAW" WITH FAMOUS "DADO-ARBOR"

The ONLY Portable Saw that CUTS GROOVES!

CUTS 2x4's, ALL ANGLES! Fits ANY ¼" Drill in Seconds with new "Slide-Lock"

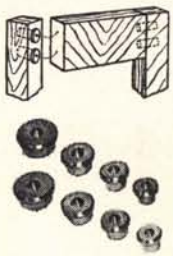
Build anything from a bookcase to a bungalow with this powerful saw attachment. Rips and crosscuts up to 2" board in one easy cut. Exclusive "Dado-Arbor" swivels sawblade to cut grooves up to ½" wide x 1" deep in one cut! **Not even a $100 portable saw has a dado cutter!** Has graduated gages for ripping, depth and angle cuts. Can be used with one hand. Strong steel gear drive and self-lubricating lifetime bearings assure long trouble-free use. Includes 5" Combination Blade. 1-Year Factory Guarantee. **No. 460**..... $12.95

5-PIECE ROTARY FILE SET

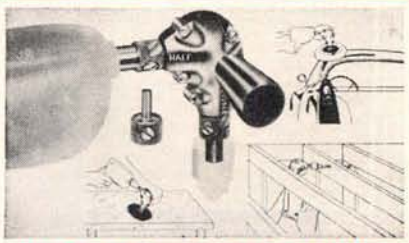
Assortment of different shapes, large sizes with ¼" shanks to fit ANY electric drill, drill-press or flexible shaft. Ideal for tool and pattern making, cutting, shaping, finishing, etc. Cuts steel, wood, plastics, wallboard, etc. **No. 5700**— **SPECIAL VALUE!** ..... ONLY $4.50

"ARCO DOWEL CENTERS"

MATCH DOWEL HOLES — Fast, Accurate



Set of 8 Dowel Centers. 2 each: ½", ⅜", 5/16", ¼". Holes are drilled in 1 of 2 pieces of wood to be joined and correct size Centers inserted. Other piece of wood is pressed against Centers & tapped. Resulting punch marks are exact centers for drilling opposite dowel holes. Set of 8. **No. 584** ONLY $1.00



"ARCO 2-Speed ANGLE-DRIVE"

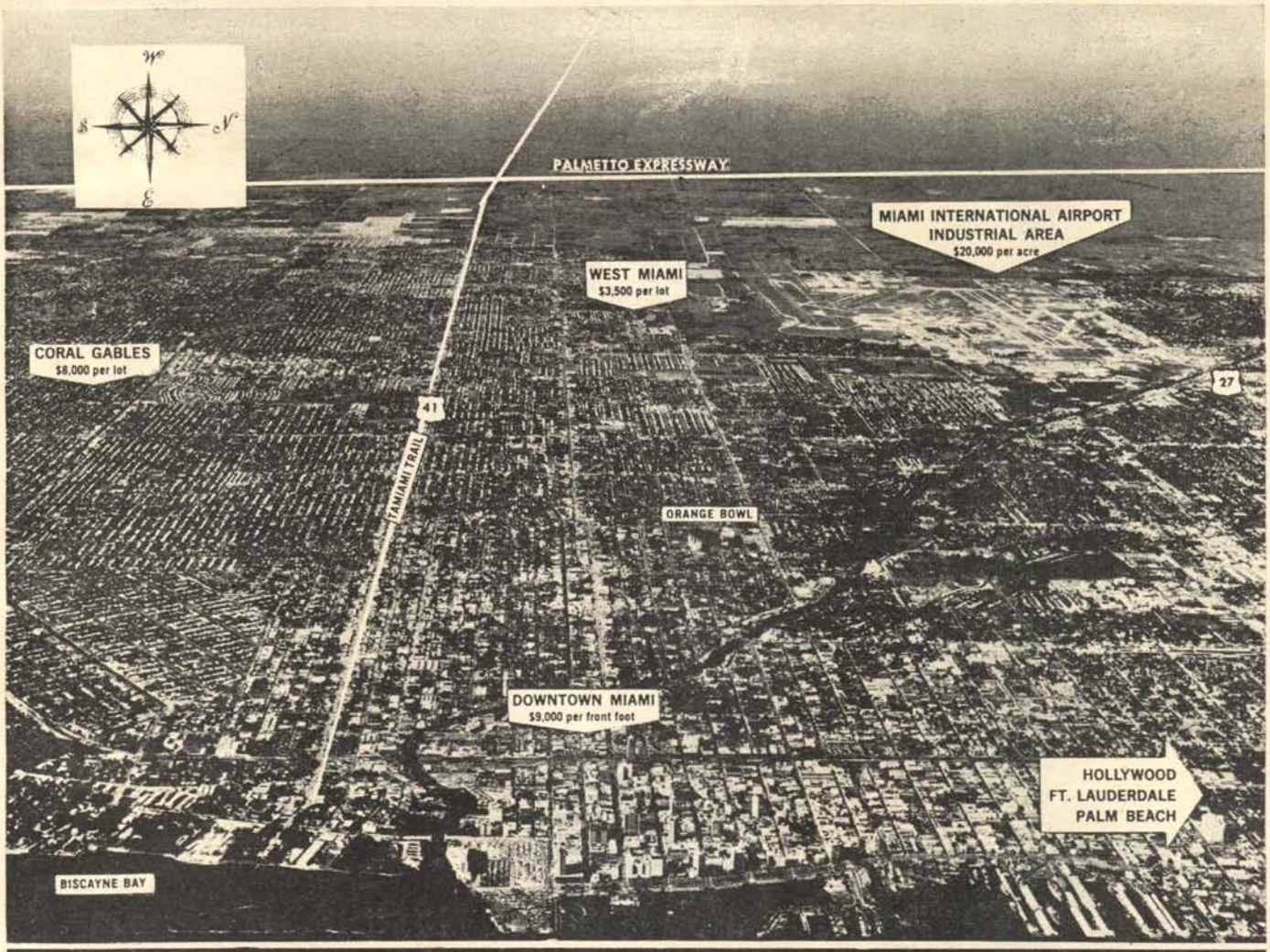
Runs Drill at ½ or Double Speed at Any Angle

FOR SANDING, BUFFING, MASONRY DRILLING

Fits ¼" Electric Drills. **Speed Reducer** permits masonry drilling, prevents burning and uneven finishes when polishing furniture, autos, etc. **Double Drill Speed** gives you the smoothest surface you ever saw when sanding. Also speeds up slow RPM drills. **Angle-Drive** permits working in close quarters and awkward angles. 1-year guarantee. **No. 350** $4.95

ARROW METAL PRODUCTS CO. Dept. WB-I, 421 West 203rd St., N. Y. 34, N. Y.

Fortunes can be made in FLORIDA LAND



5 ACRES (216,320 SQUARE FEET) $795 FULL PRICE $1 DEPOSIT $10 PER MONTH

BUY CHEAP AND WAIT FOR PROGRESS
With over 15,000 new Florida residents every month, demands for residential and industrial property have pushed Florida frontiers west. As land demands increase, land becomes scarce and its value increases . . . a simple case of supply and demand. For example, similar land in this area was offered to the public for $595 for a 10-acre tract in 1956. The value of this land has increased over 100% in this short time.

LESS THAN 50 MILES WEST OF MIAMI
Large blocks of this land have been released to the public, making it possible for any enterprising citizen to buy this land amazingly cheap. Most people made their fortunes this way . . . buying cheap land and selling at handsome profits if development starts. Though undeveloped and without roads and drainage, and none are planned, as fast as this land is sold prices should go up. Today is the time to buy before increasing costs put it out of range for John Q. Public!

There's No Risk! Your Deposit Is Protected by a

30 DAY MONEY BACK GUARANTEE

SEND $1 WITH THIS COUPON

Your purchase entitles you to—

- APPROX. 216,320 SQ. FT.
- FREE RECORDABLE DEED
- NO CLOSING COST OR HIDDEN CHARGES
- NO TAXES 'TIL PAID • NO INTEREST

GOLDEN FLORIDA ACRES, Inc., WO-1
420 LINCOLN ROAD
MIAMI BEACH 39, FLORIDA

Enclosed find $1 deposit. Please send map, contract and brochure on my

☐ 5 ACRES, $795 — $10 MONTHLY

☐ 10 ACRES, $1,495 — $20 MONTHLY

Name.....

Address.....

City.....Zone....State.....

REFERENCES
Miami-Dade Chamber of Commerce

AD61024(K) (6)

PLAY SANTA!
TREAT YOURSELF TO A
DUST WAND

IT'S WANDERFUL FOR CLEANING YOUR RECORDS!

turntable model
changer model
$4.75 complete

- Gives records up to four times greater life
- Doubles stylus life
- Installs instantly
- Cleans every groove on an LP record approximately one hundred times during a single play
- Eliminates static electricity which would attract more dust
- Gently removes all dust and lint just before the moment of playing
- Reduces surface noise; Clarifies and improves reproduction
- Prevents distortion caused by lint clogging the stylus

ESL® FOR LISTENING AT ITS BEST
See your local Hi-Fi dealer or write

Electro-Sonic Laboratories, Inc

627 Broadway • New York 12, NY

WORKBENCH volume 19 number 1

Contents—January-February, 1963

FEATURES

Shoe-Shine Kit 6
M. H. Slutz

Two-Way Baby Chair 8
C. Joe Thomas

Humidity and the Home Owner.....10

Compact Power Tools 12

Activity Desk 14
Virgil Gray

Renewing A Chair Seat.....16

Spinning Wheel, Part I.....20

Colonial Desk-Chest 24

Building Kitchen Cabinets 26
Part IX, Built-In Ovens
Ralph Treves

Updated Gas Light 30

Feather Boards 32
Victor W. Kondra

Adjustable Bookmark 33

Working With Sheet Metal, Part I....34
E. R. Haan

No-Duct Range Hood 37

Easily-Installed Humidifier 38

What's New in CB Radio.....40

Flexible Dryer Vent 42

Danish Doorstop 47

Oscillating Drum-Sander Attachment.48
Bruce Burk

Installing a Silent Switch.....55
V. Lee Oertle

In the Next Issue.....63

DEPARTMENTS

Letters to the Editor..... 4

Shoppers' Showcase 18

Refinishing Clinic 44
Refinishing Kitchen Cabinets
G. L. Bix

WORKBENCH Research Department ..52

WORKBENCH Women's Page 56
Workshop Collages
Dona Z. Meilach and Elvie TenHoor

Shop Tips 62

Best Articles of 1962.....58

ADVERTISING AND SALES OFFICES

New York 17, New York, Ed. J. Smith
50 East 42nd Street, OXford 7-7990

Minneapolis 2, Minn., Milton B. Bock
Baker Building, FEderal 6-5357

Chicago 3, Ill., John Cockerell, Inc.
116 South Michigan, ANdover 3-6929

St. Louis 1, Mo., John Cockerell, Inc.
915 Olive St., GArfield 1-0907

Los Angeles 5, Calif., The Eschen Co.
3142 Wilshire Blvd., DUnkirk 2-8391

San Francisco 4, Calif., The Eschen Co.
57 Post St., SUtter 1-7440

DeLand, Florida, R. W. Hunter
Box 1280, REdwood 4-5191

John E. Tillotson II.....Publisher

Jay W. Hedden.....Editor
C. B. Morse.....CB Radio Editor
G. L. Bix.....Refinishing Clinic
E. McCall.....Assistant Editor
B. A. Leasure.....Art Director
M. Carithers.....Staff Artist
M. Niblo.....Editorial Assistant
R. Turpin..Advertising Manager

WORKBENCH is published bimonthly by Modern Handcraft, Inc., 543 Westport Road, Kansas City 11, Missouri. Second class postage paid at Kansas City, Missouri, and additional mailing offices. Thirty-five cents a copy. Annual subscription $2 in the United States and its possessions; $2.50 in Canada; Foreign subscriptions, $2.50. Six weeks advance notice reouired for change of subscription address. Both old and new addresses must be given, and request marked for Circulatio,n Department, WORKBENCH. Printed in the U. S. A.,

Copyright by Modern Handcraft, Inc., 1962.

Postmaster: Send form 3579 to: Modern Handcraft, Inc., 543 Westport Rd., Kansas City 11, Mo.

Contributors should make a copy of all manuscripts submitted Every effort will be made to return rejected manuscripts, photographs, and diagrams, if accompanied by sufficient first class postage, but WORKBENCH will not be responsible for any loss of such material.

WOODWORKERS

YOUR COMPLETE MONEY-SAVING BUYING GUIDE for 1963 IS NOW READY

NEW

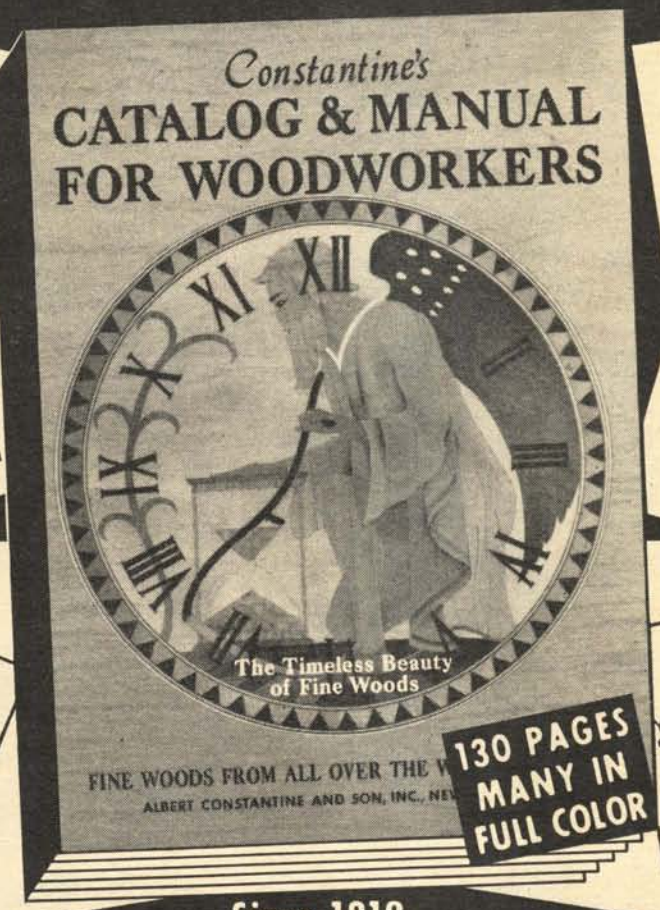
Dozens of plans for exciting new projects, carefully selected from the best available. No matter what you'd like to build—from a birdhouse to a built-in storage wall—you're sure to find the plans you'll need to make the job go quicker and easier in this big special plans section . . . and they're all priced really LOW too!

NEW

A new collection of veneers never before available to craftsmen anywhere: Benge, Blackwood, Chenchen, Ireme and Mansonia are some of the new additions to the most complete assortment of finest-quality, rare foreign and domestic veneers available anywhere in the world! All at prices far below what you'd expect to pay!

NEW

Exclusive new Pre-Cut plus Inlaid Wood Picture Kits: Father Time Clock (pictured on cover of catalog) many more—including an 18" x 38" rendering of the "Last Supper", containing more than 550 pieces precut from the finest veneers available, all ready to glue in place to create a true masterpiece in wood.



130 PAGES MANY IN FULL COLOR

NEW

Oak Blanks for making steak plates and chopping blocks for the kitchen—already laminated and ready for finishing . . . Ash Blanks for baseball bats—from the same source that provides the stock from which the bats for the biggest sluggers in the National League are made. Think how pleased your son—or any other boy—will be to have a bat made especially for him!

NEW

Complete Wood Carving Department featuring the largest selection of fine foreign and domestic woods for carving and sculpturing available anywhere . . . plus a complete assortment of lignum vitae mallets and other professional carving tools, books on wood sculpturing, etc. . . . everything for both amateurs and professionals.

NEW

Complete Pipe Maker's Department . . . everything you'll need to make your own fine briar pipes at a fraction of the cost of ready-made pipes—imported Spanish briar wood blocks by the hundreds, roughed out for easy finishing . . . plus rubber stems, etc.

NEW

Exclusive Rainbow Veneers. Here are the finest veneers in all the world dyed in gorgeous rainbow hues—from subtle pastels to rich, vibrant, full-bodied colors—to add more beauty, drama and interest to all your creations in wood. And you'll be amazed at the low prices!

NEW

You'll find page after page of exciting new items too numerous to mention here—unusual new hardware, the latest in tools specially designed to fill the needs of both professional and amateur woodworkers—but see for yourself . . . mail the coupon below today . . . NOW!

Since 1812...

World's Largest Source for Rare Imported and Domestic Woods, Woodworking Supplies, Tools, Hardware, Plans and Projects

Whether you work with wood for fun or profit you're sure to find everything you need in Constantine's big new Catalog and Manual for Woodworkers, the only complete source of supplies for woodworkers the world over. You'll find finest-quality, rare imported and domestic woods in veneer, lumber and plywood . . . all at SURPRISINGLY-LOW PRICES! See many wonderful new items: Constantine's exclusive Pre-cut Inlaid-Wood-Picture Kits, carving blocks for wood carvers and sculptors, breathtaking rainbow woods, genuine carved wood trim, picture frame mouldings, period and modern furniture hardware, new books . . . dozens more exciting items. Includes Identification Chart of 60 rare woods from all over the world, largest selection of inlay borders and inlays you'll find anywhere — all in RICH, NATURAL COLOR. Page after page of practical articles and instructions on veneering, wood finishing; other inspiring projects. Rush coupon below for your copy TODAY. Enclose 25c with coupon for postage and handling. Mail coupon NOW!

Albert Constantine and Son, Inc., Dept. A-8
2050 Eastchester Rd., New York 61, N.Y.

SEND FOR YOUR COPY TODAY-NOW!

Albert Constantine and Son, Inc.
2050 Eastchester Rd., Dept. A-8
New York 61, N.Y.

Enclosed 25c for new 1963 Constantine Catalog and Manual for Woodworkers.

Name_____

Address_____

City_____ Zone____ State_____

BUILD YOUR OWN POWER TOOLS - TILT/ARBOR SAW, BANDSAW, BELT SANDER — SAVE $50 OR MORE

12" COMB. DRILL-PRESS LATHE DISC SANDER-GRINDER

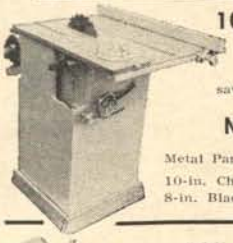
12-in. swing, 31-in. between centers. Iron pipe bed locks in vertical position for drilling.

3 SPEED BALL BEARING SPINDLE

JACOBS 1/2-IN. CHUCK

Metal Parts Kit (less pipe for bed) $29.95 — Save $50 to $250!

10" TILT/ARBOR SAW



Ball bearing arbor. Cuts 3¼ in. deep, tilts 45 degrees. Capacity and performance of floor saws selling for $150 and up.

NEW LOW PRICE

Metal Parts Kit $19.95

10-in. Chrome-Edge Blade $3.45

8-in. Blade $2.25

12" & 18" BAND SAWS

(12" only illustrated)

Ball bearing drive, rigid cast aluminum wheels. Large tilting tables. Capacity and performance of band saws selling for $95 to $300.

Metal Parts Kit for 12-in. BAND SAW $23.95

Metal Parts Kit for 18-in. BAND SAW $39.95

Send check or M.O. in full; or $3.00 deposit, balance C.O.D. All shipments Parcel Post or Express Collect.

SPECIAL!

PLANS, FULL-SIZE PATTERNS $1.00 each, or SEND $2.00 for Plans of ALL THREE Machines illustrated above. REFUNDABLE. FREE CATALOG!

GILLIOM POWER TOOLS MFG. CO.

1109 North 2nd St. — St. Charles 51, Mo.

Solid Cherry Turnings

Faithful reproductions, carefully made of seasoned and dried solid Cherry—no glued-up pieces. Designs are clean cut, fully machined, polish sanded and ready to finish. Shipped in about 10 days. Satisfaction guaranteed. Finishing instructions free with each order.

STYLE		SHIPPED FREIGHT COLLECT
226	Canopy bed post and finial	$15 ea.
226	Canopy bed post (Reeded) and finial	$16 ea.
225	Cannon-ball bed post	$12 ea.

PLUS PSTG. FROM CENTRAL KENTUCKY

208	Table Post—Roped—3 lbs.	$4.00 ea.
208	Table Post—Reeded—3 lbs.	3.75 ea.
208	Table Post—Plain—3 lbs.	3.00 ea.
204	Card Table Post—Roped—3 lbs.	3.50 ea.
204	Card Table Post—Reeded—3 lbs.	3.00 ea.
204	Card Table Post—Plain—3 lbs.	2.75 ea.
201-A	Night Stand Post—2 lbs.	2.50 ea.
200-A	Sewing Table Leg—2 lbs.	2.50 ea.
31	Coffee Table Post—1½ lbs.	1.30 ea.

We also offer 29 different custom made solid Cherry colonial furniture reproductions, K.D. and UNFINISHED. Send 25c for drawings, description and prices.

GASTON FINISHES

WB — BOX 1246

BLOOMINGTON, INDIANA

Letters to the Editor

Mr. Harry Harris:

It would be difficult to describe my feelings when I received the Jan.-Feb., 1962 issue of WORKBENCH and saw someone else building "my" clock on the cover. When I read the article I learned, of course, that you had been in contact with S. A. Byers in California. He and I struck up quite a correspondence during the course of my assembling my clock kit. Have only had my workshop 3 years, turning to woodworking when I gave up golf. Wish I had taken to woodworking 25 years ago; it's a great hobby. Am enclosing a snapshot of my clock.

Alan Ford, Atlanta, Ga.

Dear Mr. Ford:

Passed your letter on to Mr. Harris, but am taking the liberty of using part of it, and the snapshot of your beautiful clock on this page to show our readers.

Dear Mr. Hedden:

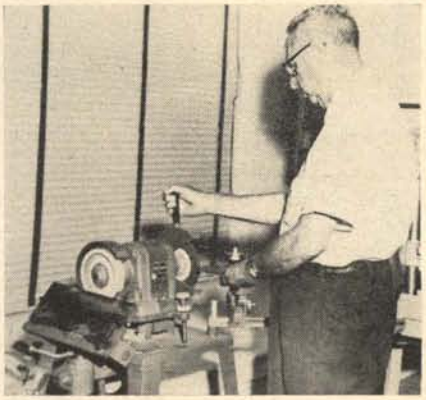
Read the article "CB On The Farm" in the May-June issue with great interest. Didn't know CB rigs were rugged enough to be used on farm machinery. I have a couple of Johnson transceivers; they look like those shown in the article.

R. Main, Chicago.

Dear Mr. Main:

Yes, quality CB rigs can be used almost anywhere on any sort of vehicle. The transceivers shown in the article were all made by E. F. Johnson Co. of Waseca, Minnesota, manufacturers of quality CB equipment. They provided the photos, got actual case histories of CB transceivers being used in farm operations to help us write the article.

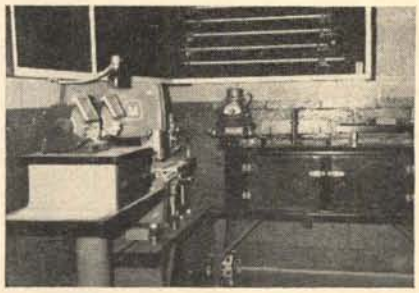
Our first out-of-town visitor to the New Model Shop was Col. Ray Munger (USA Ret.) from Denver, Colorado. Col. Munger was in town to visit his son and stopped by the shop. He has a Belsaw Tool Sharpener, was interested in seeing our Foley Filer and the other equipment in the Shop. We look forward to other readers stopping by to see us and the Shop.



Dear Mr. Hedden:

Am sending a few color photos of my woodworking shop to show the color scheme, as well as the layout. My shop is a separate building 28 x 28 ft. and has fifteen windows for plenty of light. Enjoy reading WORKBENCH, it has so many interesting items in it. Hats off to you and the staff; hope you will keep up the good work.

O. P. D., Easthampton, Mass.



Dear Mr. D.:

We will keep on trying to improve WORKBENCH and bring more interesting items each issue. Let's hear from you readers as to what projects you would like us to publish. Mr. D. has an unusual shop, being in a separate building away from the house. Most of us have to be content with a basement shop, or an end or corner of the garage. Congratulations!

Jay W. Hedden

Weller® Hi-Powered Sander

Here's a sander with greater wood removal capacity than sanders costing twice as much. Its powerful performance and low price are made possible by Weller's 4.8 ampere, heavy-duty reciprocating motor.

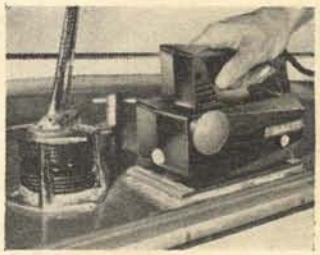
This is a professional sander that's easy to operate. Slides smoothly over a surface—never bucks or twists. Although it's powerful and rugged, it's light enough to use on vertical or overhead surfaces without fatigue.

The Weller Hi-Powered Sander is trouble-free. There are no brushes, metal bearings or commutators to wear out. Lubrication is never needed. Motor is fan cooled.

Safest sander on the market. Housing is made of high-impact plastic. There are no exposed metal parts that can be energized—no electric shock hazards. The Weller Hi-Powered Sander can even be used for wet surface sanding. UL approved. Model 77.

Gives super-smooth finish. Straight-line action sands with grain. Provides a far smoother finish than disc or orbital action. Won't scar wood or leave marks.

Goes into corners and right up to walls. Sanding plate extends beyond housing. Guiding knob fits either side of sander for right or left hand operation.



Removes paint easily without gouging or scarring the surface. Begin with coarse sandpaper. Then switch to fine sandpaper for a satin-smooth finish.

Big 26 sq. in sanding plate and 14,400 strokes a minute get jobs done fast. Assorted sandpaper strips are included. Easily secured to sanding plate.

WELLER ELECTRIC CORP. • 601 STONE'S CROSSING ROAD, EASTON, PA.

Complete Home Training Course Now Available

Today—it's easy to acquire the skills and craftsmanship of fine woodworking and cabinetmaking with Interstate's complete "shop method" course. Prepared by expert instructors, the course consists of 22 profusely illustrated training manuals containing detailed instruction covering *all* phases of woodworking, including selection of woods, planning and laying out projects, correct use and care of all hand and power tools, joint making, cutting, assembling, finishing, simple upholstery, etc. Tested learn-by-doing instruction projects give work bench training and experience in actual construction. Course is approved for beginners and professionals alike.

Interstate Training Service
Portland 12, Oregon

Accredited School, National Home Study Council.

Send Post Card Today for
FREE BOOKLET

INTERSTATE TRAINING SERVICE
Dept. F-7, Portland 12, Oregon

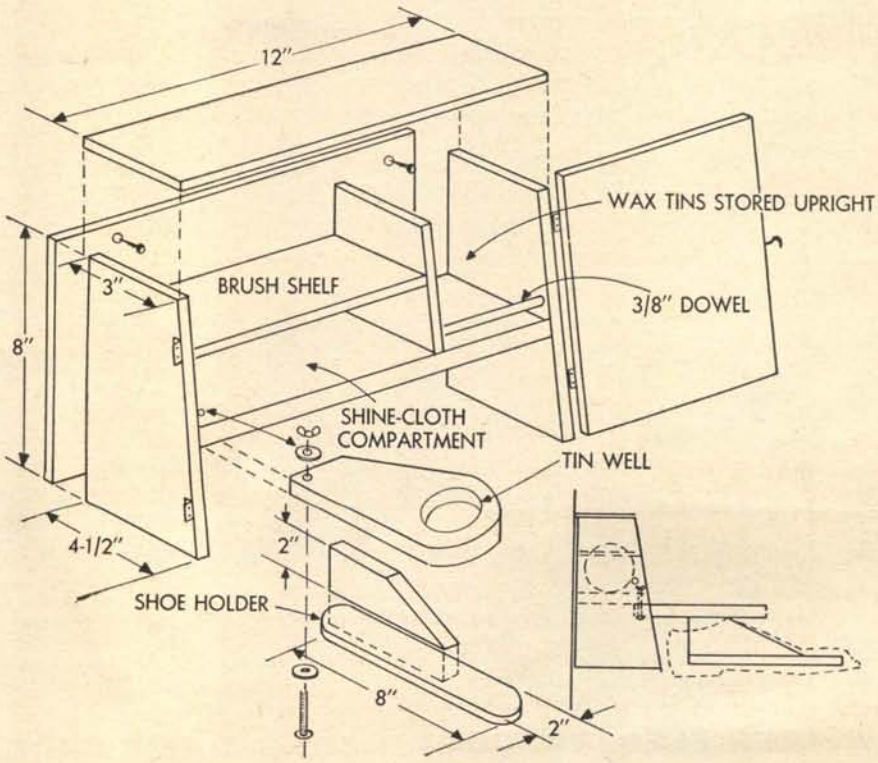
Please send free booklet and information on your complete course in Woodworking & Cabinetmaking.

Name_____
Address_____
City_____ Zone____ State_____

Shoe-Shine Kit

M. H. SLUTZ

FITTED WAIST HIGH inside a closet door, this handy shoe-shine kit makes shoe care a simple chore. All brushes, cloths, waxes and polishes are within easy reach, special compartments being provided for every item. The shoe holder, as dimensioned, will accommodate the average-size shoe. You may wish to make it larger or smaller to better fit your own footwear. If the holder is made longer, the kit will have to be lengthened by the same amount so the holder can pivot in under the shelves to allow the doors to close. Note that the tin well has tapered sides to permit tins of various sizes to be held. Cut all parts of the shine kit from ⅜-in. plywood, except for the shoe holder and wax-tin holder that are ¾-in. plywood or 1-in. solid stock. Cut all pieces to size, then measure for the doors and cut them to fit. Drill a hole in the back of the kit near each corner to permit attaching the assembly to the inside of a closet door. If the door is a hollow-core type, expanding screw anchors will have to be used. The completed kit may be stained and varnished, or enameled. △ △



140 Pages.. Many in Full Color

Just Out!

Rush coupon for NEW Catalog of Craftsman money saving values in

WOOD

and Workshop Tools, Materials & Equipment

Everything for the wood worker and his shop... rare imported and popular domestic woods... tools, hardware, equipment, supplies, mouldings, veneers—America's most complete source!

NEW! Stanley and other Name Brand Power Tools at DISCOUNT PRICES!

NEW! More Complete Lines of Lamp Parts and Upholstery Supplies.

NEW! Biggest Selections of Turned Legs in Wood, Metal...and Plastic!

NEW! Mosaic Tile in Great Variety of Colors, Types, Sizes! New Tile Projects!

Over 1,500 Items for the Workshop
New! — improved type Glue Injector

- Card Suit, Checkerboard Fraternal Insignia Inlays.
- Folding Leg Hardware.
- Baby Crib Hardware.
- Magnetic Hammers, Glue Injectors, Other Tools.
- Full line of Upholstering Supplies.
- Section on Archery and skiing.
- Complete section in FULL COLOR showing beautiful wood inlays and colorful bandings.
- Finest Kiln Dried Domestic Woods, Rare Imported Woods ...many available only from Craftsman.
- Enlarged section of cabinet hardware for every purpose.
- Attractive embossed mouldings and carved wood ornaments.
- New Clock Kits and Hi-Fi Cabinetry.
- Metal legs in brushed brass and black wrought iron; wrought iron shelf dividers and other useful items.
- Big selection of lamp parts.
- New line of Plastic furniture legs.
- America's most complete selection of woodworking tools.
- Money-making ideas to turn your hobby into spare time cash.

140 pages... packed with many more items and ideas like these... send for your copy today!

CRAFTSMAN SAVES YOU MONEY!

Send today for this amazing new catalog... your complete wood-buying guide and workshop book. Craftsman is your best and most complete source of finest quality top grade kiln dried domestic and rare imported woods. Whether you need a single board or hundreds of board feet, choose your needs from the remarkable new Craftsman catalog. Includes beautiful new wood inlays (shown in natural color), bandings, matched plywood, embossed mouldings, carved modern and traditional ornaments, stock for wood carving projects, too! See the big new selection of tools, "hard-to-find" cabinet hardware, ornaments and woodworking equipment for both hobbyist and professional. This all new edition is packed with new wood projects and hundreds of valuable money-making ideas to help you earn welcome extra income from this interesting hobby. Rush COUPON below for your copy today. Enclose 25c to help pay mailing and handling costs. Write at once... your copy is waiting for you, now.

FULL COLOR REPRODUCTIONS OF MANY RARE WOODS

CRAFTSMAN
Wood Service Co.

2729 S. Mary St., Dept. L-1
Chicago 8, Illinois

Your Catalog Is Ready— Mail Coupon Today!

CRAFTSMAN WOOD SERVICE CO., Dept. L-1
2729 South Mary Street, Chicago 8, Illinois

Rush giant new Catalog of Wood and Woodworking materials. I enclose 25c to cover part of cost.

NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....

Two-Way Baby Chair

C. JOE THOMAS

Unit can be used on floor as chair or feeding chair. Note that "feet" are extended to provide maximum stability.

HANDY ENOUGH to be appreciated by any mother, this versatile baby chair also could be a project for Grandfather to make, for his own grandchildren, or perhaps to sell. The back and sides of the chair are ⅜ or ½-in. plywood, the seat, footboard and arms are cut from ¾-in. plywood or 1-in. solid stock. The tray is cut from ¼-in. plywood with a rim bandsawed from 1-in. lumber. After making the heart-shape cutouts with the aid of a pattern made by enlarging the squared drawing, start the assembly. The footboard and seat are fastened to the back, then the sides are attached. The arms are slotted on the undersides to receive the upper edges of the arms, and shaped to fit against the back. The "feet" of the chair are cut from hardwood. Note that the two back feet are longer than the two front feet. The feet are fastened to the underside of the chair by means of roundhead bolts fitted in holes in the chair bottom. The bolts pass through the slots in the feet and are fitted with thumbnuts. A washer is fitted on the bolts on the upper and lower surfaces of the feet. This permits the legs to be adjusted in and out and clamped in position. When the chair is used on the floor, the legs are extended to make the item extremely stable. When the baby chair is set on a chair to permit using it as a high chair, the legs are adjusted in to clamp on the seat of the chair, as shown in the photo. Small blocks cut from ⅜-in. plywood are fastened on the underside of the arms behind the tray to serve as stops. Clamps that hold the tray in position are cut from ⅛-in. steel flat. Tray length is from outside to outside of the arms.

All nails used in the assembly are countersunk and covered with wood putty. Afer thorough sanding, the chair is primed, then given two coats of enamel. △ △

When item is fitted on kitchen or dining-room chair to make high-chair, "feet" are utilized as clamps.

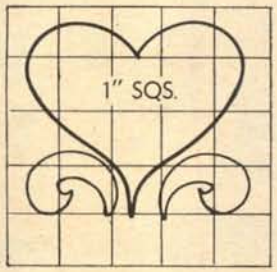


FIG. 1

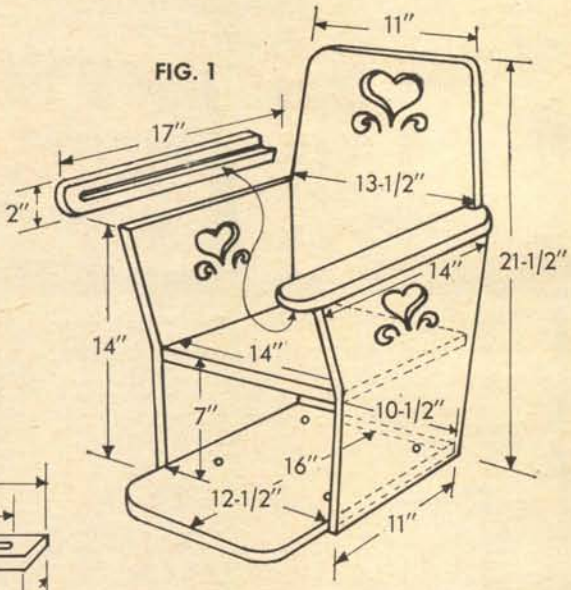
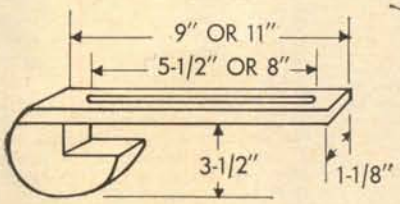


FIG. 2



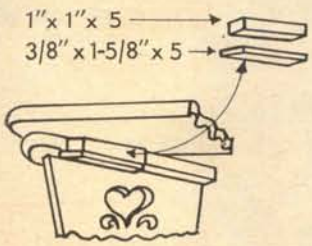
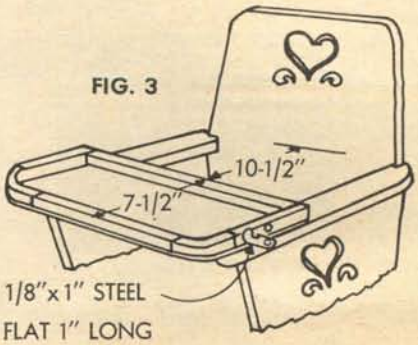
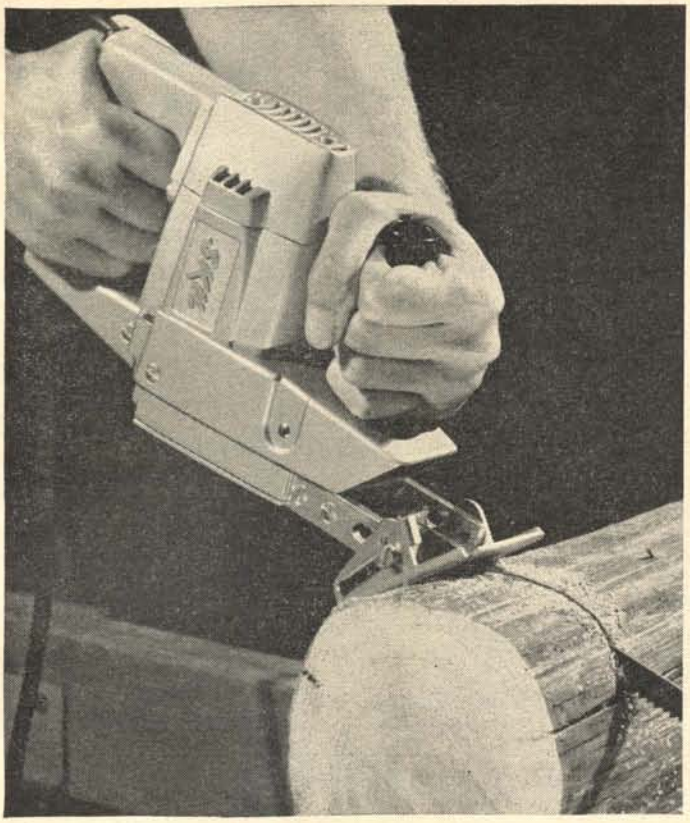
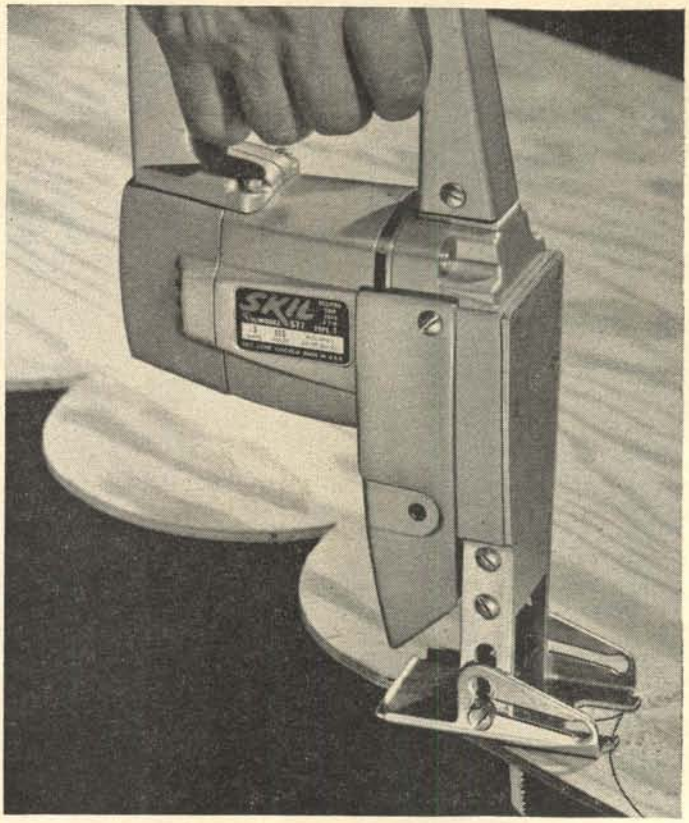


FIG. 3



NEW KIND OF POWER SAW





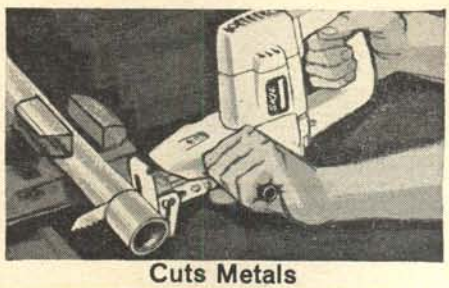
Skil Recipro Saw makes <u>any</u> cut from 6″ fence posts to fancy patterns!

The Skil Model 577 Recipro Saw is the *first* portable power saw with almost unlimited cutting capacity! It'll cut thin sheeting or thick wooden posts . . . or steel pipe, sheet metal, aluminum, plaster, wall board, plastic laminates, you name it!

It's a coping saw, hacksaw, scroll saw, jig saw, crosscut saw and rip saw that'll make you twice the craftsman you ever thought you were! You can buy it at better hardware and lumber dealers everywhere. Priced under $50 (slightly higher in Canada).

Bevels, Miters

Cuts in Walls, Floors



Cuts Metals

SKIL
POWER TOOLS

WRITE FOR FREE POWER TOOL CATALOG

Send to Skil Corp.,
5033 Elston Ave., Chicago 30, Ill.

(Name)

(Address)

(City) (Zone) (State)

510A

Humidity And The Home Owner

National Humidification Assn., Inc.

DO HOME REPAIRS TAKE SO much of your time that you have little opportunity for building projects in which you are more interested? Do chairs and other furniture require frequent re-gluing because the joints become loose? Is wallpaper starting to crack and peel off the walls? Is your flooring starting to shrink, with cracks showing between the boards and sections of the floor beginning to squeak when you walk on it? The reason for all these problems might be an improper humidity level in your home.

What causes the problem? First, warm air holds more moisture than cold air. During the winter cold air seeps into a house through window frames, opened doors, joints in walls and other almost-invisible openings in the structure. This cold, dry air is heated, then absorbs moisture. This process is what causes the trouble. The warming air draws moisture from every source available; from glue used in furniture joints, from wallpaper paste, from the wooden flooring and even from a human body. If your wife is buying skin creams and tonics constantly and complaining about dry skin, the humidity level is to blame. If the same wife points out that the curtains and drapes are dull and drab looking, and should be replaced, the cause again is lack of humidity. It is a fact that in many homes during the winter, the humidity level gets so low that the air in the home is drier than the air over the Sahara desert in the summer time.

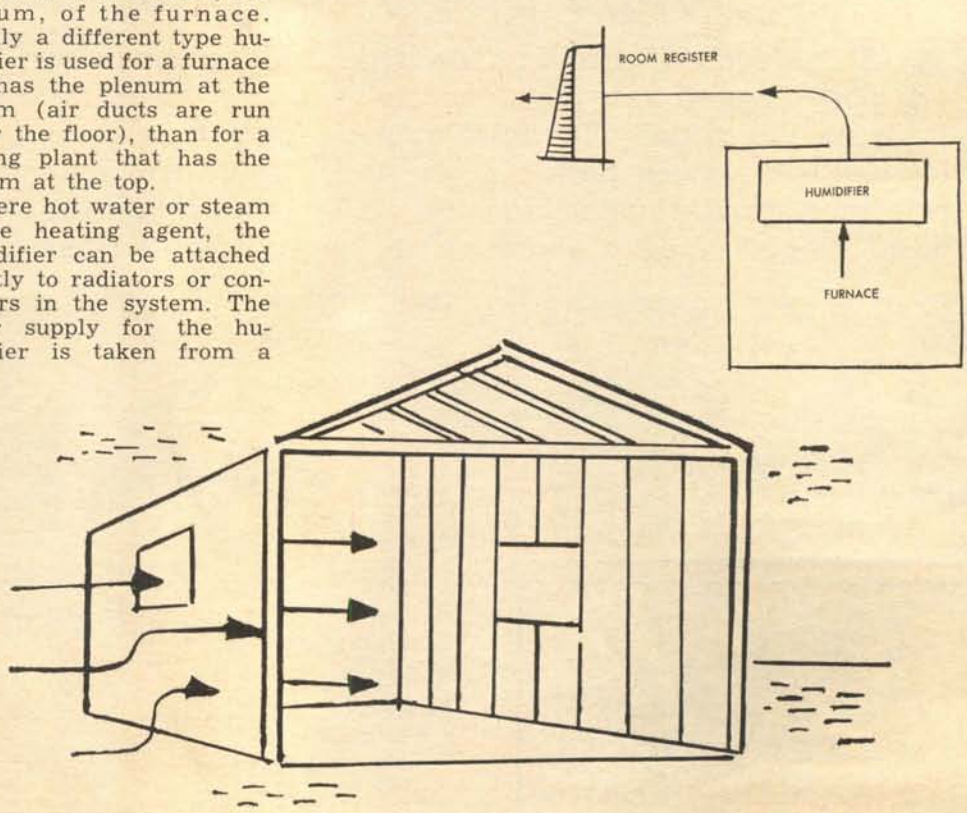
These problems caused by low humidity can be eliminated by installing a humidifier. Humidifier units generally are reasonably priced, and are available in a number of different sizes and models. They are automatic in operation, with a control system that replenishes the water supply as rapidly as it is used. Installation of a humidifier is a fairly easy job, one that any do-it-yourselfer can handle. The installation takes only a short time, and usually it is not necessary to shut down the furnace for the job.

For a warm-air furnace, whether gravity or forced-air, the humidifier is installed in the bonnet, or plenum, of the furnace. Usually a different type humidifier is used for a furnace that has the plenum at the bottom (air ducts are run under the floor), than for a heating plant that has the plenum at the top.

Where hot water or steam is the heating agent, the humidifier can be attached directly to radiators or convectors in the system. The water supply for the humidifier is taken from a radiator in a hot-water heating system, and from the nearest pipe in a steam unit. Should you live in an apartment or rented house, portable units are available.

Once installed the humidifier is completely automatic in operation. When outside air is colder, it has less moisture when it enters the home. The colder temperature causes the furnace to work at a higher temperature, thus discharging more moisture into the air from the humidifier. The opposite occurs when outside air is warmer, and has more moisture in it when it enters the home. It thus is apparent that furnace temperature determines the amount of moisture mixed with the air.

Humidifier maintenance is simple. First, the water supply to the humidifier should be shut off each spring. The water container of the unit should be cleaned of any deposits. Plates, if used, should be changed yearly. Any water aperture and float valve should be cleaned. Parts that need to be replaced can be obtained from your local dealer. With fewer home repairs to worry about —let's get down to the shop and start that project. △ △



AM-FM RADIO

MELLINGER APPROVED SEAL

Long Range Hi-Fi Reception, Full AM and FM band coverage, 6 tubes plus 2 diodes. High style decorator cabinet. Easy triple-knob control.

FOR ONLY **$10.95**

BUY BELOW WHOLESALE

CARDIGAN SWEATER

FOR ONLY **$2.02**

Australian Wool, Fancy Buttons, Hand-Framed, Carefully Sized.

MELLINGER APPROVED SEAL

Start your own big profit business with hundreds of bargains like these... ONLY FOR THE MAN WHO WANTS A BUSINESS OF HIS OWN

MELLINGER APPROVED SEAL

TAPE RECORDER

FOR ONLY **$10.51**

Complete with speaker, microphone, tape, reels, etc.
Records — Plays Back
Erases — Rewinds
Built-in Speaker
Needs No Outside Power

MELLINGER APPROVED SEAL

ZOOM MOVIE CAMERA

Take close-up pictures from far away — lets you "move in" instantly. Electric eye guides the exposure indoors or out.

FOR ONLY **$21.70**

DISCOVER THE SECRETS OF IMPORT!

See what to buy—how to buy it at rock bottom prices. Cut out middle-man profit! Buy direct from manufacturers abroad. Thousands of items available.

And these are only four of hundreds of import bargains you can get to make fantastic profits of 200% and more... here are examples of other high profit imports.

Transistor Radio	$3.02	Electric Razor with Case	3.40
Derringer Pistol	5.74	17 Jewel Watch	2.87
Star Sapphire Ring	6.00	Tailor Made Silk Suit	22.50
Cigarette Lighter	.17	Binoculars	1.20
		Teakwood Chest	.90
		Electric Food Mixer	1.70

Prices subject to market fluctuation.

THIS IS A BIG MONEY BUSINESS

You Can Start in Your Spare Time

Whatever you now do for a living—whether you have your own business or work for someone else, importing offers you profits beyond your wildest dreams. You need no previous experience! You need no capital investment! You don't even have to pay for merchandise in advance. And the profits are all yours because you deal direct with overseas suppliers. When I give you my secrets of Import profits, I reveal everything you need to know. When you realize that over 30 Billion dollars changes hands every year in Import-Export, you can easily see there is room for hundreds of beginners in this big profit home business.

8 FREE IMPORTS Get details about Mail coupon today.

SEND NO MONEY! DO NOT ORDER PRODUCTS FROM ME! I show you how to get these bargains and hundreds others direct from overseas suppliers.

I limit this offer to serious-minded men and women who want to start a big profit home business. If you are ready, act now!

B. L. Mellinger
Director

When you buy right, you make money! Get Free plan! Mail coupon today!

MELLINGER CO., Dept. J231, 1554 S. Sepulveda, Los Angeles 25, Calif.

RUSH COUPON for FREE BOOK

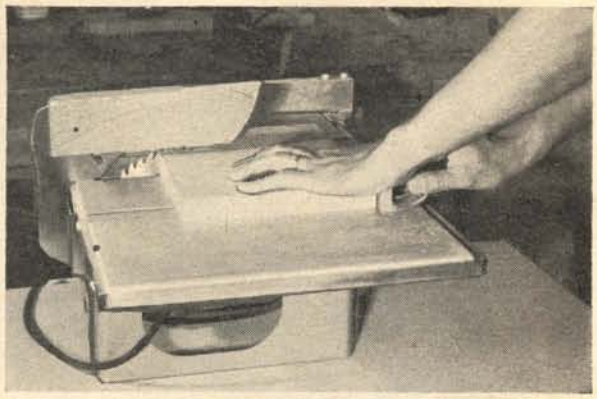
The Mellinger Co., Dept. J231
1554 S. Sepulveda Blvd., Los Angeles 25, Calif.

Show me how I can start a business of my own and make big profits. Send Free Book telling how others follow your plan to success. No cost, no obligation. Show me how I can get bargains like these and thousands more direct from overseas suppliers.

Name _____

Address _____

City _____ Zone _____ State _____



Guard and splitter on Compact table saw is high and clear, does not get in way of work. Size of blade permits cutting 2-in stock.

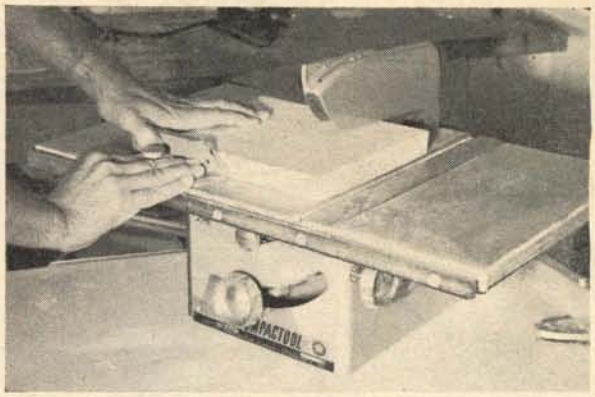
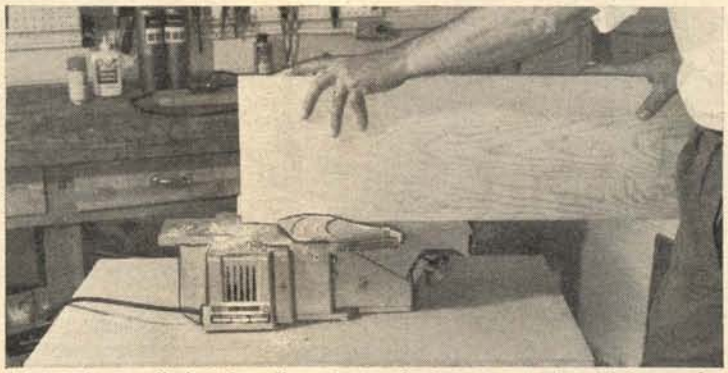


Table saw tested was fitted with table extensions; we would recommend these extensions, as standard-size table is quite small.



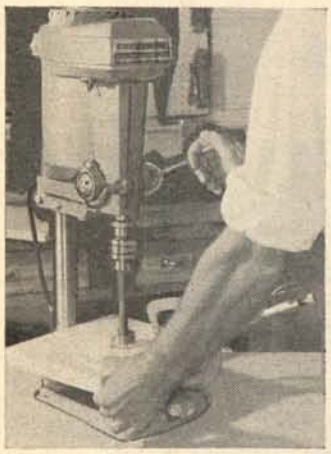
Jointer is small, but handles stock of almost any size that can be fitted on the table. Cutting head has three knives, rotates at 4,100 r.p.m. for 12,000 cuts per minute, will make full ¼-inch cut.

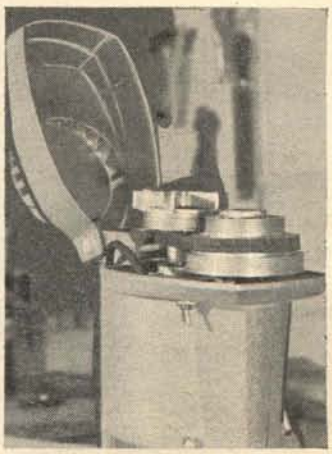
Compact Power Tools

AFTER CHECKING OUT all three of the Rockwell Compactools, table saw, jointer and drill press in our Model Shop we are awarding our Shop-Tested Seal to each. The table saw has a 7¼-in. blade, will cut through 2-in. stock with the blade set at 45 deg. The built-in ½-H.P. motor took the blade right through 2-in. stock without hesitation. We would recommend the table extensions—an optional extra—as were used on the saw we tested. The standard table is just a little undersize. Even with the extensions the complete saw weighs just slightly over 30 lbs., making it easy to carry to the job. Molding cutterhead and knife sets, as well as a number of other accessories are available.

The 4-in. jointer was even more of a surprise performance-wise. We ran stock of all kinds and sizes over its 3-knife cutting head and got uniformly good results. The jointer also can be used for rabbeting, tapering, beveling and chamfering. This tool also can be tucked under your arm and carried to the job.

Of the three tools our favorite would be the drill press. We have never used a tool that was as accurate and handy as the Compactool press. Its small size permits it to be taken anywhere that power is available, it will handle bits with shanks up to ½-in., and drive wood bits with heads up to 1½ in. diameter and more. Flip back the top of the housing and you can change the belt to get any of 3 different speeds. Pulleys and belt are grooved for better alignment, less slippage. △△





Drill press is a full-powered dandy. Bit being used here is 1½-in. spur type that takes plenty of torque to cut through wood. Press has three-speed pulleys, reached by lifting top of unit.

FREE SAMPLES

"WE MAKE AS MUCH AS $18 an Hour WITH FLOK-KRAFT..."

"OUR EARNINGS GOAL IS $40,000 Next Year"

Not everyone does this well, but partners GAMBLIN & STAFFORD say:

Formerly employed as house painters, Mack Stafford and A. W. Gamblin accepted our offer (the same offer we now make to you!) and are cashing in big. These prosperous partners say, "We Flok-Kraft dog toys and wall placques which are sold in stores – also Flok-Finish radio cabinets, put Flok-Kraft monograms on sports wear, and add Flok-Suede Finish to women's handbags." There are hundreds of high-profit applications of Flok-Kraft, so as yet the partners have barely scratched the surface. With the ambition they have shown, their goal of $40,000 a year income seems well within reach.

Mack Stafford
A.W. Gamblin

"I MADE $15 AN HOUR on my first 2 jobs!"–CHARLES BROOKS, GEORGIA

"I MAKE $7 TO $15 AN HOUR. Flok-Kraft is out of this world!" – AUGUST CIRCO, CALIFORNIA

BE LIKE DICK HARRIS
of Salem, Massachusetts
START SPARE TIME AND ENJOY 2 INCOMES AT ONCE!

Dick Harris and his children

Dick Harris is a meat cutter. A good job, but with a wife and three growing youngsters he needed more income. So he started a Flok-Kraft business at home. He reports average earnings of $5.50 an hour in his spare time – not a fortune, but a fine start. Just think what even $5.50 an hour, for only 10 or 12 hours a week, would mean to you, on top of your regular income! And chances are you may do much better!

FLOK-KRAFT'S AMAZING 3-DIMENSIONAL FINISH

Brings Huge PROFITS from Homes, Factories, Stores – Also MAIL ORDER!

FLOK KRAFT TRADE MARK REG.

A Revolutionary DISCOVERY

"Flok-Kraft" is Craft Industries' trademark process by which rayon or other fabrics, cut into microscopic particles, is sprayed like paint to give any surface a luxury finish that looks like $10-a-yard velvet! Works on any surface – smooth or rough, flat or round, wood, paper, glass, rubber, plaster, plastic, or you name it! Every rainbow color, including the flame-bright fluorescents. Nothing like it, ever, as an easy-to-start home business!

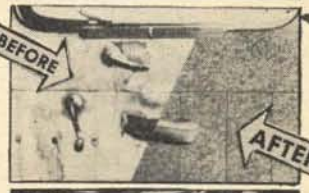
HOMES – Flok-Kraft offers almost unlimited ways to make big profits from homes. Renew discarded toys for friends and neighbors. Beautify lamp shades. Line dresser drawers with a kitten-soft finish to protect delicate garments. Put a gorgeous decorator finish on old (or new) radios and TV sets. Hundreds of such services *in great demand!*

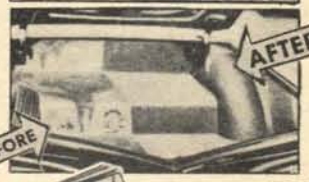
AUTO DEALERS – Many Flok-Krafters *specialize* in services to car dealers. They line auto trunks with a Flok-Kraft velvety finish to prevent scratching luggage – restore soiled or torn door-panel upholstery to *look like new*, and add many $$s to a used car's value. A special "leopard skin" finish on the dash of sports cars creates *tremendous* sales appeal. One Flok-Krafter in Missouri writes, "I got $52 in 4 hours lining auto trunks – $13 an hour!" Jobs like these may bring you *several hundred dollars a month* in spare time on week ends.

FACTORIES – Many manufacturers have *ideal jobs* for Flok-Krafters to do at home. This amazing, suede-like finish is applied to phonograph turn tables, used to line jewel boxes, chests for table silver, containers for delicate instruments. Animal toys take on amazingly life-like appearance when Flok-Krafted to simulate fur. Dick Harris (above) coats bottoms of bowls, figurines, etc., for a pottery manufacturer to prevent scratching tables. We show you *many* big-profit applications like these examples.

STORES –Gift shops, department stores, etc., offer a waiting market for *your own* Flok-Kraft products. Uncoated molded figurines cost you a few cents, retail up to $5 with a rich, velvet-soft Flok-Kraft finish. Unfinished animal toys bring *double price* when you add the natural *look* and *feel* of the real thing! Put out your own Flok-Krafted greeting cards, suede-finished belts and handbags – even velvet-like *wall-paper* for dens, offices. Flok-Kraft Christmas trees to look snow-covered. Make and market *scores* of products – locally or nation-wide, through salesmen who are already calling on stores. Also a tremendous opportunity in *mail order*. We supply step-by-step instructions.

Take In $5 to $10 an hour from 50c worth of Raw Materials





Flok-Kraft raw materials *cost only pennies*, while the end product brings almost any price within reason. And the process is *extremely fast*. You can Flok-Kraft a radio cabinet (in a color to fit *any* decorative scheme) in 15 to 20 minutes. Materials cost about 25¢. Usual charge is $5 – you profit up to *$20 an hour!* Raw materials for lining an auto trunk run about 50¢ – usual charge $12.50 to $15 – takes about half an hour. Huge profits in *anything you do* with this fantastic miracle finish of 1,001 uses!

EVERYTHING YOU NEED TO START IN BUSINESS YOURS TO EXAMINE AT HOME BEFORE YOU DECIDE

No buying "sight unseen" with Flok-Kraft. We send you a *complete Starting Outfit* to examine and *try out at home* before you decide. Big, illustrated Home Instruction Course reveals highly developed technical methods used here at Craft Industries, the *world center* of the Flok-Kraft industry. Outfit includes high-velocity Flok-Kraft Spray Gun – enough materials to fill *at least* $100 worth of orders – samples of 46 different Flok-Kraft colors to show prospects and make it easy to get business. Also examples of advertising aids, mail order letter and folders and much, much more. *Everything you need* to get into the big money *fast* is sent for you to *try out*, without obligation to buy a thing. Mail the Coupon TODAY SURE! No cost or obligation. It may be (as it has for *many* ambitious people) the *most important act of your life!*

CRAFT INDUSTRIES, Dept. J791
15133 S. Broadway, Los Angeles 61, Calif.

ALL 4 FREE! AIRMAIL COUPON TODAY

FREE SAMPLES!

CRAFT INDUSTRIES, Dept. J791
15133 S. Broadway, Los Angeles 61, Calif.

Please rush me actual beautiful **samples, Proven 7-Way Success Plan, 50 New Home-Business Ideas** Booklet, and other **revealing details.** Rush everything **FREE** and **POSTPAID** – no obligation.

Name _____ Age _____

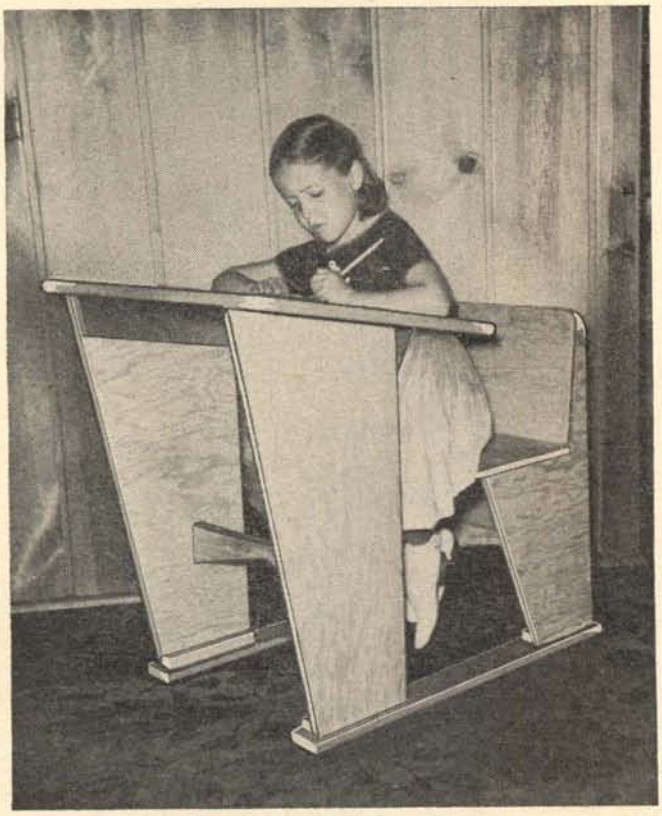
Address _____

City _____ Zone ____ State ____

ACTIVITY DESK

Unit shown is unfinished. It can be painted or given a special finish as was described in the last issue. Top here is purchased drawing board.

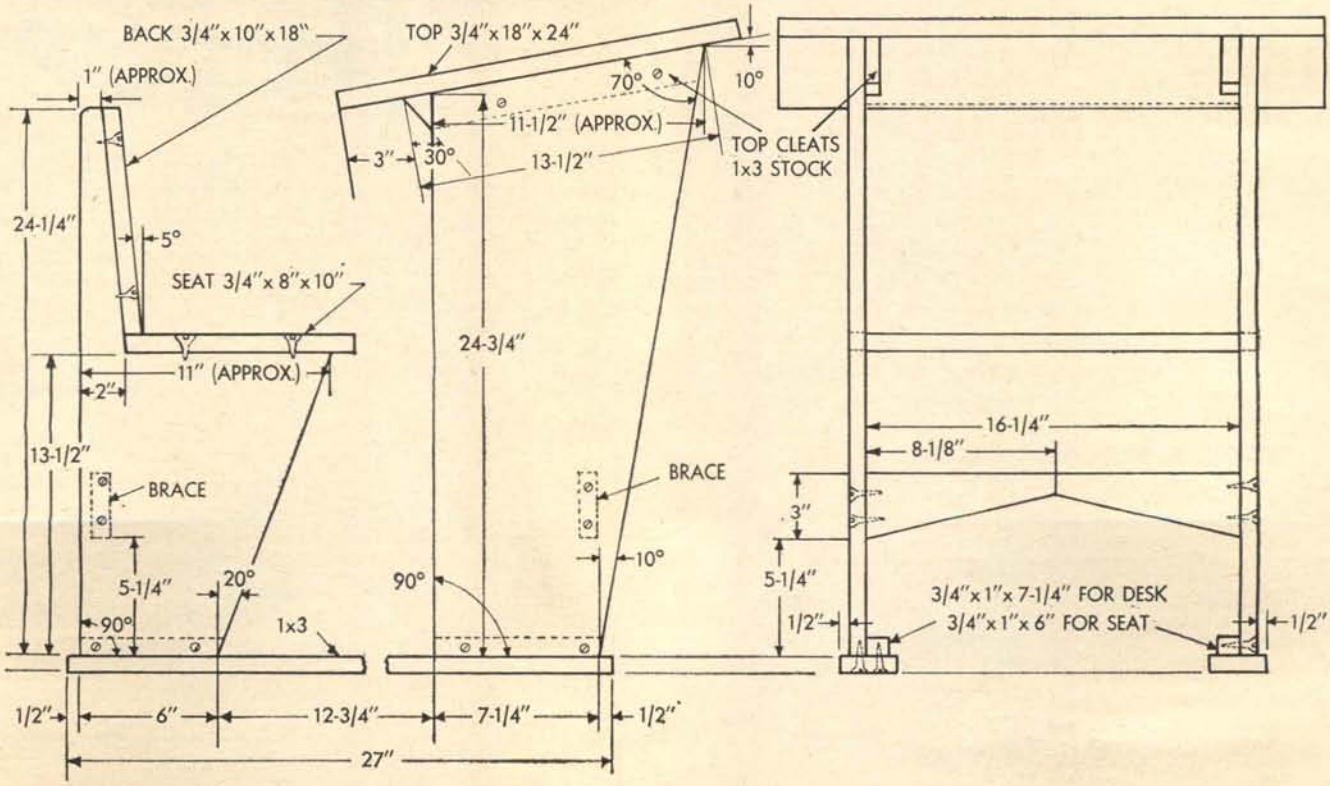
VIRGIL GRAY



AN UPDATED VERSION of a one-unit school-desk-and-seat, this activity desk is fine for study or can be used as a drawing table. On the original the top was made from a drawing board purchased at an art-supply store. If the younger children are to use the desk, ¾-in. plywood can be used, as it is more resistant to the abuse the top will receive from this age group. All plywood parts for the desk and seat can be cut with a hand saw, although, as in any instance, power tools will considerably reduce the time and labor required. Solid stock is indicated as being used for the brackets under the top, and for the braces between the desk and seat sides and the base runners; this also can be plywood if desired. Solid stock is preferable, as wood screws do not hold as well in the edge grain of plywood as in solid stock. The distance between the seat and the desk can be varied to suit the youngsters who will use the unit; also there is enough length in the runners to permit adjustment as the child grows up.

Glue and wood screws are used at all joints, all surfaces are sanded smooth and finished. Special finishes, (see Fabulous Finishes for Fir Plywood in Nov.-Dec., 1962 issue), can be applied or the activity desk can be given a couple of coats of enamel.

The activity desk would be a fine project for service or church organizations; desks of this kind can be used for Sunday schools, church schools and other classes of instruction. It would be a *fairly simple* matter to add shelves and drawers under the desk top and a cabinet could be built under the seat. △ △



Get into...

PLASTIC LAMINATING AT HOME!

Sensational New "ONE MAN BUSINESS" ..pays $10 to $20 profit for each dollar of cost.

Make Up to $5 an Hour by our MAGIC MAIL PLAN... get orders and cash from your mailman!

Here's the newest and most fascinating of all home-operated businesses. For the first time, a simplified machine brings the fabulous profits of Plastic Sealing and Plastic Laminating within the reach of the small operator. Can be operated in a corner of the kitchen, basement, or garage. And any man or woman, regardless of age, education, or experience—can learn this interesting work *in a few minutes of reading*—can turn out professional jobs *after one hour's practice.*

TWO EXCITING FIELDS FOR BIG PROFITS!

No house-to-house canvassing. No face-to-face selling. We not only supply the equipment you need for the work, but also show you exactly how to cash in big daily profits from two big demand fields.

A FORTUNE IN PLASTIC SEALING

Millions of people want to protect valuable cards, photographs, documents and papers against wear, soil, and damage. By our MAGIC MAIL Plan you get this business through the mails. Open envelopes, take out money and orders. Details of plan will amaze you. It will be sent free. We even furnish financing help. Just mail coupon.

ENORMOUS PROFITS IN LAMINATING

A creative, artistic business. Gift shops sell your entire output. Just a few of thousands of giftwares illustrated on this page. Beautiful colors. Endless designs. Exclusive "one of a kind" appeal brings sales at ten to twenty times the cost of materials. Beautiful illustrations and instructions for making these artistic novelties sent free.

NO MONEY—Just Send Name!

We'll Even Help with Financing!

WARNER ELECTRIC CO.
1512 Jarvis, Dept. L-6-A, Chicago 26, Illinois

The opportunities in Plastic Laminating are so big that space here does not permit even skimming the surface. To get any idea **FREE** at all of the size of these markets and your place in this sensational business you must read the details. See for yourself how easy it is to do the work—how you can put plastic sheets into your machine and take out a fortune—how money and orders come to you in the mail—how gift shops clamor to get more and more of your creations—how you can start with one machine and build up a big production plant with others doing the work—how you can get money and business from every State in the Union—how you can achieve independence without study or experience.

RUSH COUPON

Never before has such an opportunity been offered the small, home-operator—an opportunity to gain complete personal independence in a big money business of your own. Don't lose a minute. Get the facts at once. All information, fully illustrated with pictures, is free. Send the coupon—or send your name and address on a postcard. There is no charge now, or at any other time. Send for the information on this exciting opportunity today.

Cash Money Comes to You in the Mail

By our MAGIC MAIL Plan you sit at home, send out mail, and get back money and orders. Additional profits in supplying lifetime protection for **SNAPSHOTS—IDENTIFICATION CARDS—DISCHARGE PAPERS—DRIVERS' LICENSES—SOCIAL SECURITY CARDS—VOTERS REG. CARDS—MENUS—BIRTH CERTIFICATES—CREDIT CARDS—BIRTH AND WEDDING ANNOUNCEMENTS—PASSES—DOCUMENTS.**

Lifetime protection. See how laminating prevents soiling, wear, and moisture damage with flexible, plastic covers.

Thousands of Beautiful ART CREATIONS

Made by Laminating as explained in our Free information. Send coupon for list and pictures of **COSTUME JEWELRY—JEWELS—CIGARETTE BOXES—CUFF LINKS—NOVELTY BUTTONS—TRAYS—CANDLESTICKS—COASTERS—CLOCK CASES—LAMP BASES—PICTURE FRAMES—BOOK ENDS—CHARMS—ADVERTISING SIGNS—NAME PLATES—BELT BUCKLES—CHECKERS PAPER KNIVES—CHESSMEN—BOOKMARKS—TIE RACKS—KEEPSAKES OF ALL KINDS.**

WARNER ELECTRIC CO., Dept. L-6-A
1512 Jarvis Avenue, Chicago 26, Illinois

Please mail, postage prepaid, complete information with illustrations showing the things I can make and the money possibilities in Plastic Laminating. All free. No Salesman is to call. Also, tell me your Financing Plan and how I get orders and money by the MAGIC MAIL Plan.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Want BIG PAY— Your Own Business?

Be a LOCKSMITH

306 pieces of equipment Locks, Picks, Tools & Parts FREE for use with course.

You can quickly step into a well-paid job or start a big-profit business of your own. Shortage of locksmiths means opportunities everywhere, spare-time or full-time.

EARN EXTRA MONEY FROM THE START! All Special Tools, Supplies Furnished Free. Age, education, minor physical handicaps don't matter in this growing, steady-income trade. You learn fast at home — gain practical experience through well-illustrated lessons. You do real jobs on car locks, house locks, padlocks and safe locks under the personal guidance of experts.

FREE ILLUSTRATED BOOK — For a future as your own boss, or in a big pay job, send for FREE illustrated book. No salesman will call. Only school of its kind. Lic. State of N.J.; Accredited Nat'l. Home Study Council. **Approved for Veterans.**

Locksmithing Institute, Division of Technical Home Study Schools, Dept. 3201-3, Little Falls, New Jersey.

MAIL COUPON NOW

Locksmithing Institute, Dept. 3201-3
Little Falls, New Jersey
Please send FREE illustrated book without obligation.
Name.....
Address.....
City.....Zone.....State.....

Tools and hardware WHOLESALE!

HUGE PROFITS! MORE MONEY!

Start Your Own Business

Sell nationally advertised tools to your friends and neighbors. Also for your own industrial and institutional use. New giant wholesale catalog has room for only your name on it. You get all the orders and reorders. **A MILLION DOLLAR INVENTORY AT YOUR FINGER-TIPS. NO STOCK TO CARRY. ORDER AS YOU NEED IT!** . . . Stanley, Clemson, Disston, K. & E. Lufkin, Miller Falls, Wiss, S&K, Thor and many other name brand tools, appliances, power tools, hand tools and others too numerous to mention. **WHOLESALE DISCOUNTS UP TO 50% off. WE SHIP COAST TO COAST** . . . Send $1 deposit and get the new giant wholesale catalog. Your $1 is credited to your first purchase or refunded if not 100% satisfied. Write NOW!

Get up to 50% off

U. S. GENERAL SUPPLY CORP., Dept. S-524
149 Church St., N. Y. 7, N. Y.

DON'T PAINT UNFINISHED WOODS!

USE **Blond-It**

Penetrating Wood Finish

Blond-It makes low cost woods look like expensive varieties. One coat gives cabinets, furniture, paneling any of dozens of smart colors, tones. Enhances natural beauty of grain. No painty look. Professional results guaranteed. Send name of dealer for FREE color folder, Dept. WB

JAMES B. DAY & CO. 1872 Clybourn Ave. Chicago 14, Ill.

SPEEDS paint removing two ways

1 New Wonder-Paste NO-WASH Remover acts with amazing speed on thickest paint, enamel, varnish and other finishes.

2 Eliminates wash-up or neutralizing of surface after stripping finish.

Heavy-bodied—stays put on uprights.

Won't thin out, won't thicken regardless of temperature.

At paint and hardware stores.

● **Send 25¢ for illustrated Refinishing Manual**

Write for free literature.

Wilson-Imperial Co., 124 Chestnut St., Newark 5, N. J.

RENEWING A CHAIR SEAT

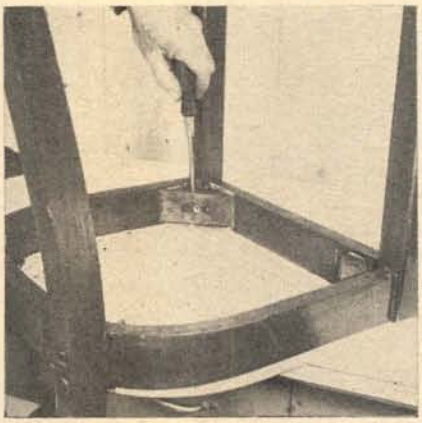
KITCHEN AND DINETTE chairs can be given a fresh new look, simply by replacing the covering on the seats. Quite likely the plywood on which the seat material is fitted will be all right, as will the padding. This means you need only a couple of yards of material. Fabric or plastic can be used, vinyl-plastic material being recommended because it is available in a wide range of colors and embossed textures, and is easily cleaned. The vinyl fabric is more expensive than some of the older "unsupported" plastic sheeting, but more durable.

If the chairs have been padded with cotton batting, and it now is pretty well matted down, you might wish to replace it with ½-in. urethane or rubber foam material. The padding is available wherever upholstery supplies are sold.

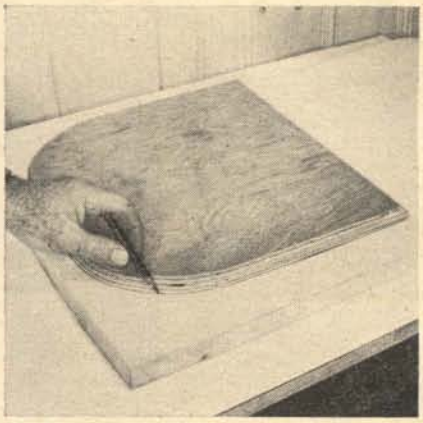
First step in the seat renewal job is to turn the chair upside down and remove the seat assembly. The seat will be held to the chair by screws or perhaps by metal clips and screws. Pull out tacks or staples used to hold the cover on, and put the cover aside to be used as a pattern for the new material.

With foam-rubber padding and new vinyl-plastic covering, dinette chair looks neat and fresh, good as new.

Remove any padding and check to make sure the plywood part of the seat is not split or cracked. If the padding is bad, replace it with a modern material as suggested. Use the plywood as a pattern for cutting the padding. Next, bevel the edges of the padding, then place the

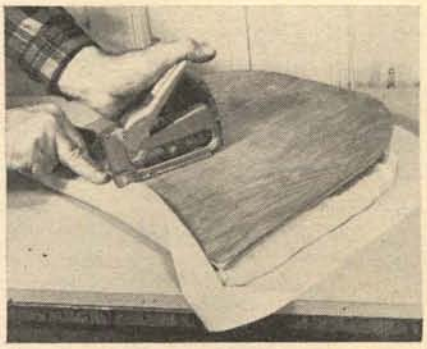


First step is to turn chair upside down and remove screws or clips that hold seat-cover assembly to frame of chair.



If foam-rubber padding is used to replace cotton, use plywood seat as pattern to mark and cut the material.

Cut padding to shape of chair seat, then bevel edges with a pair of shears. Bevel is positioned down on seat.

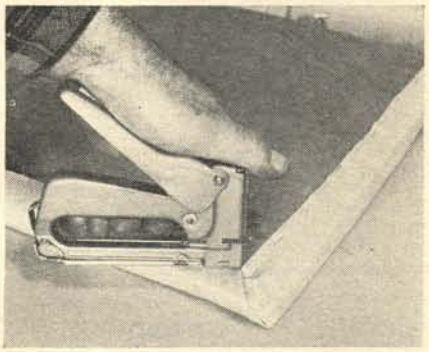


Cut plastic sheeting 1½ in. oversize all around. Place rubber on seat, then staple sheeting along one straight edge.

Corner is difficult part for beginner. After stapling one edge of seat, make fold at corner as indicated, draw tight.

padding with the bevel side against the plywood. Fit the cut material over the padding and pull it around the back of the plywood. Staple along a straight edge, then pull the material snug on the opposite edge so the padding is rounded, the material is smooth. Start stapling at the center of an edge, work in both directions. Corners will be a little tricky; see the photos for the folding method. If the corner does not come out quite right, pull the staples and re-do the job. After you have done one or two chairs, the job will become easier and the last few will be no trouble at all.

If there are fabric or plastic inserts on the chair back, remove them, make a pattern from the old, then replace. They usually will be held with fancy-headed tacks. Use new tacks when replacing the insert. △ △



Second step in making neat corner is to fold material up around plywood seat, pull tightly, then staple.

At rounded corners, pleat fabric, use plenty of staples to hold material smooth and tight on the curve.

BUILD WITH CRAFTPLAN PATTERNS

HUNDREDS OF THINGS to do and make FOR FUN AND PROFIT

New! Plans for STRADIVARIUS VIOLIN
All the information and full-size patterns you need to make accurate copy of famous Strad violin. Order by Cat. No. 389 . . $2.00.

New! COLONIAL SPINNING WHEEL
Authentic design. Full-size. Use for actual spinning. No. 379 . . $2.00.

PLATING BABY SHOES. How-to-bulletin. No. 362 . . $1.00.

DOLL HOUSE PLANS
Complete details 6 different houses . . Calif. style. Colonial. English, etc. Cat. No. 364 . . $1.50.

DOLL HOUSE FURNITURE
For houses covered by above plans. No. 365 . . . $1.50.

22 KITES
How to build all kinds . . simple 2-stick, to giant 5 footer. No. 354 . . $1.50.

PENNA. DUTCH DESIGNS
93 full-size patterns: invaluable for hobbyists, decorators. No. 353 . . . $1.50.

HOW TO MAKE ALL KINDS OF CANDLES.
Practical how-to information. No. 352 . . $1.00.

47 DESIGNS CANDLESTICKS, CANDELABRA,
you can make. No. 328 . $1.50.

15 ACTION WINDMILLS
Galloping horse, bull chasing farmer, etc. Full-size patterns. No. 313 . . $1.00.

SIX DESK PLANS
Desks for all purposes. Six fine designs. No. 371. $1.50

GIANT CIRCUS PINUPS
—up to 22 in. high. Pinups made of thin plywood, painted gay colors, delight youngsters. No. 314 . . $1.

15 OUTDOOR FIREPLACES
—Full details. No. 204 . . $1.

COPPER TOOLING
23 designs. No. 343 . . $1.00.

15th Century WOODEN WHEEL CLOCK
New! Wonderful conversation piece. Single hand indicates hours, fractions. Surprising in simplicity. Full-size patterns all parts. No. 372 . . $1.50

157 SILHOUETTE DESIGNS
Great variety of subjects. Professional quality art. No. 349 . . $1.50.

24 PIECES OUTDOOR FURNITURE
Chairs, tables, benches, folding, roll-about. Modern designs. No.348 . . $1.50.

30 LAWN NOVELTY CUTOUTS
Unusually cute designs. Full-size patterns. No. 347. $1.50.

MUSICAL NOVELTIES
Use Swiss movements. 19 designs. No. 239 . . $1.00.

NATIVITY SCENE
Dramatic presentation of Nativity Scene . . rich in beauty and color. Creche height 8 ft. Full-size patterns all figures. No. 370 . . $2.00

KIT FOR MAKING ANIMATED COMIC PHOTOS #350 . . $1.50.

MECHANICAL COIN BANKS
5 designs. No. 361 . . $1.50.

16 DESIGNS, GUN, FISHING GEAR RACKS, CABINETS
Store SAFELY Shotguns, Rifles, Handguns; also fishing rods, lures, etc. No. 344 . . $1.00.

16 WHATNOT SHELVES, WALL RACK
Latest fashions in wall decor. All patterns full-size. No. 342 . . $1.00.

UNUSUAL BIRD HOUSES
16 Designs. Want bird houses that are completely different; if so, don't overlook these plans. No. 341 . . $1.

New! GROWING ORCHIDS AT HOME FOR PLEASURE AND PROFIT.
Plants require less care than many ordinary house plants. Full details. Cat. No. 380 . . $1.

SCRIPT LETTERING — 8" high. Full-size patterns. A to Z—Caps, small letters, numerals. No. 335 . . $1.50.

BLOCK LETTERING — 12" high. Alphabet Caps, numerals. No. 334 . . $1.50.

BLOCK LETTERING
4, 8" high. Alphabet, numerals. No. 333 . . $1.50.

GIANT A TO Z LETTERING
24" high. Complete alphabet. No. 329 . . $1.50.

LETTERING PATTERNS. 5 Distinctive Alphabets—2, 3" high. Caps, small letters, numerals. 282. $1.50.

20 SERVING TRAY DESIGNS
Tray for every occasion. No. 332 . . $1.00.

69 WOOD LATHE PROJECTS—No. 331 . . $1.50.

30 SMART LAMPS
How to make lamps like you find in smart shops. No. 308 . . $1.50.

ETCHED ALUMINUM TRAYS
12 designs, complete how-to-make details. No. 307 . . $1.50

EDUCATIONAL TOYS — 14 different. No. 324 . . $1.00

ELI TERRY CLOCK
With Wood Gears. All details and patterns needed to duplicate famous original made in 1794. No. 325 . . $1.50.

New! How to Make and Use an ABACUS (Chinese calculator that uses beads). No. 378. $1.

$6.00 WORTH OF PLANS FOR $5
If price of plans you order is $5.00 we'll include without extra charge another dollar's worth of plans of your selection. If price of plans selected is $10 you get $2.50 worth of Free plans. Your money back if you're not satisfied. *Please note*

18 DECORATOR STYLES, MODERN WALL CLOCKS
Designs compare favorably with clocks selling for up to $50 No. 326 . . $1.00.

ARTISTIC WIRE FIGURES
25 designs. No. 320 . . $1.00.

"UNCLE SAM" mailbox support,
66 in. high. No. 281 . . $1.00.

DUCK DECOYS—Mallard,
Pintail, Canvasback. No. 373 . . $1.00.

24 GADGETS FOR SMOKERS
Pipe racks, cigarette dispensers, smoking stands, etc. No. 323 . . $1.00.

MIDGET CARS
Powered by small gas engines. Two designs — racer, Jeep. No. 322 . . $1.00

New! CARVING ANIMAL CARICATURES
Tricks of making delightful little carvings. No. 375. $1.

HOME IMPROVEMENTS (Outdoor).
Plans on year-'round awnings, garage cupola, Dutch windmill, 57 trellises, fences, storm windows, etc. No. 309 $1.50.

HOME IMPROVEMENTS (Indoor).
How to make cornices, kitchen cabinets, bookcase units, modernize basement, attic, etc. No. 318 . . $1.50.

CHOIR BOYS ORGANIST
New! Motorized. Organist sways to and fro. 5 ft. 5 in. high. Very colorful. Full-size patterns. No. 369 . . $2.00

EARLY AMERICAN REPRODUCTIONS
New! Complete details 12 fine pieces — cobbler's bench, hutch tables; cranberry scoop magazine rack, ratchet lamp, etc. No. 363. $1.50

20 THINGS TO MAKE FOR CHILDREN
Novel, practical projects. No. 207 . . $1.00.

14 more ACTION WINDMILLS
Cop swinging arms, flying duck, Indian rowing, etc. No. 293 . . $1.00.

New! MIRROR SILVERING. Easy step-by-step procedure. No. 374. $1.00.

CAROL SINGERS OUTDOOR HOLIDAY DISPLAY
Singinest kids you ever saw. 47 in. high. Easy to make from plywood. Full-size patterns. No. 310. $1.

New! BONSAI-GROWING DWARF TREES
"Secrets" practiced by Japanese for centuries. No. 368 . . $1.00

MAGAZINE RACKS
All details needed to make 8 racks of attractive design. No. 307 . . $1.50.

RELIGIOUS MOTTOES
Full-size patterns, 8 inspiring mottoes, beautifully lettered Lord's Prayer. No. 306 . . $1.00.

129 JIGSAW PROJECTS
Great variety of things to make on jigsaw. No. 305 . . $1.00.

17 PIECES FINE LAWN FURNITURE
Designed for comfort, sturdiness. No. 304 . . $1.50.

COSTUME JEWELRY
Full-size patterns 482 lapel pins, brooches, name pins, alphabets, etc. No. 302 . . $1.00.

22 RACKS, CABINETS, KITS,
for Sewing Accessories. Useful, easy-to-make projects. No. 301, $1.

27 DISTINCTIVE SHELVES, SHADOW BOXES
Patterns, details on 19 attractive shelves, 8 shadow boxes. No. 300 . . $1.50.

MODERN WOOD FINISHING INSTRUCTIONS. No. 235 . . 50c.

18 Designs for WEATHERVANES. No. 269 . . $1.00

22 LAWN NOVELTIES
Have artistic touch not ordinarily found in such projects. Full-size patterns. No. 299 . . $1.50.

15 FAST-ACTION TOYS
All patterns full-size. No. 294. $1.

15 HANDSOME TABLES—Well-designed cocktail, coffee, end, lamp. Full details. No. 288 . . $1.00.

14 COLORFUL FLOWER BOXES
Full-size patterns 14 nifty boxes for potted plants. No. 278 . . $1.

16 BOOK END DESIGNS
Wonderful assortment. No. 274. $1.

GARAGE PLANS — Build Own 1, 2-car. No. 327 . . $1.50

27 BIRD HOUSES, FEEDERS
Small wren house to large colony house for martins. No. 253 . . $1.00.

BAR-B-Q APRONS—7 designs, full size patterns. No. 376 . . $1.50.

CLOWN PICTURES — Paint by number. 4 designs. No. 357 . . $1.50.

PLANTERS — 21 Designs, PLANT STANDS, HANGING GARDENS. No. 337 . . $1.00.

13 STURDY WORKBENCHES
Complete plans. No. 211 . . $1.00.

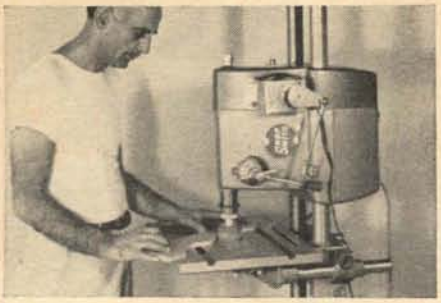
13 Designs WOOD INLAY PICTURES . . No. 315 . . $1.00

HOW TO ORDER: Send list of plans selected. Remit by check, money order, postal note, U. S. bills. Order Today!

We pay shipping charges. All plans sent on MONEY-BACK GUARANTEE.

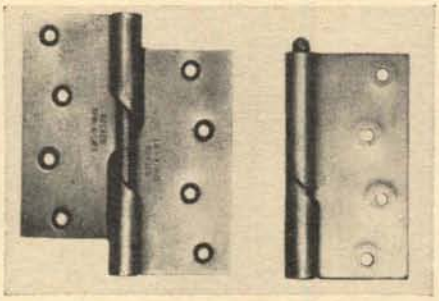
CRAFTPLANS Dept. F-54, 18250 Harwood, Homewood, Ill.

Shoppers'



Oscillating Drum Sander Kit

Convert any model Shopsmith quickly and easily into an efficient oscillating drum sander. Drum moves up and down as well as rotates. Cuts much faster and smoother. Increases sandpaper life. Does job of expensive industrial machines. Kit includes geared electric motor, die cast hub, rod end bearings, complete illustrated plans. Other needed parts easily made from odds and ends. Kit SM-1. $11.85 ppd. U. S. J & B Products, Box 5508, Sherman Oaks, Calif.

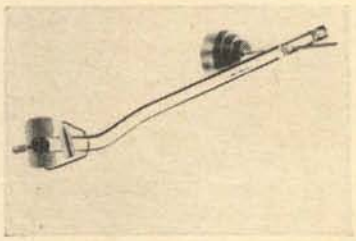


Stop—Don't Ruin That Rug!

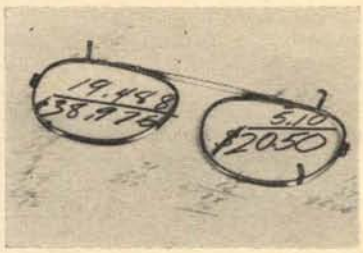
Spiral-Lift Door Hinge lifts door over rug when open. Lowers door to floor on closing. No wear on rug. More convenient. Door closes without aid of spring. Keeps out draft and dust. Aid to air conditioning and house cleaning. To remove door, just turn and lift. No pin to remove. Does not require threshold. Easy to install. 3½ x 3½ Brass Plate boxed in pairs $2.50 prepaid. Specify right or left hand closing. Order from Ideas Unlimited, P.O. Box 156-C, Pasadena, Calif.

IN SINGLE UNIT are combined AM-FM-Multiplex stereo tuner and 32-watt stereo amplifier. Speakers and record changer are all that are needed for complete music system. Kit is styled in anodized Satin-Gold and Mocha. Full details on this and other Knight-Kits are in Catalog 220, free from Allied Radio Corp., 100 N. Western Ave., Chicago 80. Catalog also has information on all sorts of electronic components for the hobbyist and professional.

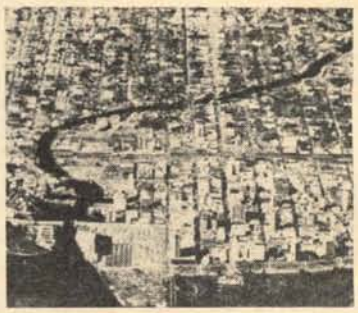
ON A NEW RECORD fresh from the folder the Dust Wand picked up a ball of dust. Cleans older records while they are played, makes them last longer, reduces wear on needles (stylus), improves all-around reproduction. Repair parts available when needed; a feature we praise. Models for turntables (shown), and for automatic record changers. Available at $4.75. For nearest dealer write: Electro-Sonic Labs., 627 Broadway, N.Y. 12, N.Y.



HAVING TROUBLE SEEING small items and details in your hobby work? Slip these magnifiers over your prescription glasses and see clearer immediately. Fit all glasses without need for adjustment. The magnifiers are as readily removed when work on tiny parts is finished. Sold on money-back guarantee. Price is $2.98, Nel-King Products, Inc., Dept. WB-102S, 811 Wyandotte, Kansas City 5, Mo. Send check or money order.



NOW IT IS POSSIBLE to buy investment acreage in Collier County, Florida, only 50 miles west of Miami (downtown Miami pictured at right). $1 down and $10 a month buys a 5-acre tract of undeveloped, unimproved land without drainage, clearing or roads, and none are planned. Total price, $795. No closing costs, interest or hidden charges. Send $1 deposit to reserve your 5-acre tract. You'll receive complete information, brochure, maps, contract. 30-day money-back guarantee. Golden Florida Acres, Dept. WB-9, 420 Lincoln Rd., Miami Beach 39, Fla.

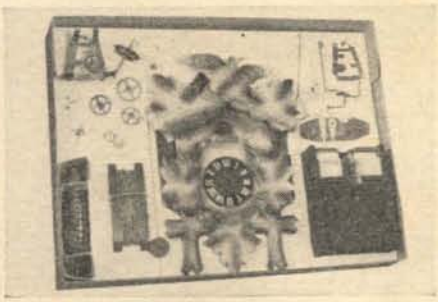


Septic Tank Trouble?

Northel Reactivator works to keep septic tank and cesspool clean. A bacterial concentrate breaks up solids and grease—works to prevent overflow, back-up, odors. Regular use can save costly pumping or digging. Simply mix dry powder in water, flush down toilet. Non-poisonous, non-caustic. Guaranteed to reactivate septic tank, cesspool. Six months' supply (23 ozs.) only $2.95 postpaid. Northel Distributors, WM-1, P.O. Box 1103, Minneapolis, 40, Minn.

Instant Backache Relief

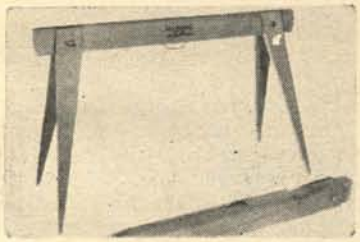
Pi Peer BACK-EASER® relieves back pain, slims waist, improves posture, helps relax tensed nerves. Strong, form-fitting, washable. Snap front. Encircling pull straps for easy adjustment and instant relief. Large foam rubber pad holds, massages back. Prescribed by doctors. No fitting. Be sure to send measurement in inches around hips. Only $5.95 postpaid. Piper Brace Co., Dept. WB-13B, 811 Wyandotte, Kansas City 5, Mo.



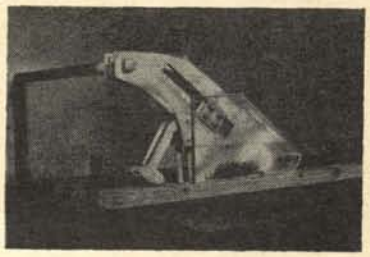
Make Your Own CUCKOO CLOCK

Exciting gift for boys of all ages. Made in the Black Forest of Germany. Complete kit of tested parts with instructions for easy assembly. Keeps correct time, cuckoos every 15 minutes, without electricity or springs. Operates by heavy pinecone shaped weight. Model shown has 10" face panel of lacquered wood in Natural pine colors, only $8.95 ppd. Not shown, 7" model (without cuckoo) just $5.95, great for children's room. Send check or m.o. to: Clocks, Box 22, Watertown, Conn.

Showcase

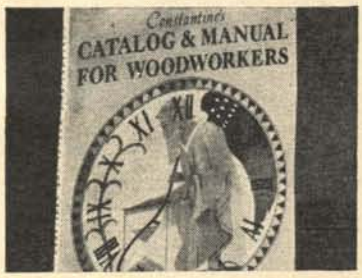


COMPLETELY PORTABLE, fully foldable these sawhorses are all of wood. Selected, straight-grained Douglas fir is used so that it is possible to support up to a full ton on each horse. The legs are locked by tightening two wing nuts. Handles are provided for convenience in carrying horses. Open height is 25½ in., length is 40 in., weight is 8 lbs each. For information: Great Midwestern Sawhorse Co., 11295 Deerfield Rd., Cincinnati 42, Ohio.

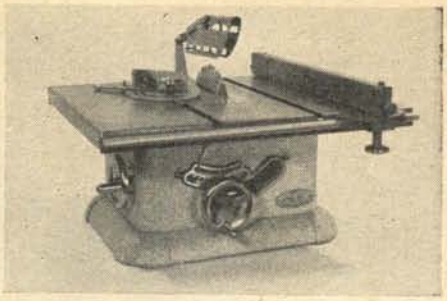


SAFETY GUARD for table saw has gliding-action, and a shield of transparent plastic so work can be seen clearly as it is cut. Unit has dual "anti-kick backs" and an adjustable splitter that can be moved clear of the work when not in use, does not interfere with safety shield. Guard fits all table saws, is easily installed; a fine safety feature for the home shop. For more information, the General Scientific Equipment Co., Philadelphia 50, Pa.

COMPILED WITH COOPERATION park superintendents and forest rangers, this book has 384 pages of information on campsites all across the United States. It lets you know if there is fishing, hunting, boating, horses and so on, as well as places to see, suggests interesting side trips. Detailed state maps help you plan your trips. $2.50 pp. Send check or M.O. Guides, Dept. W, P.O. Box 158, Rye, New York.

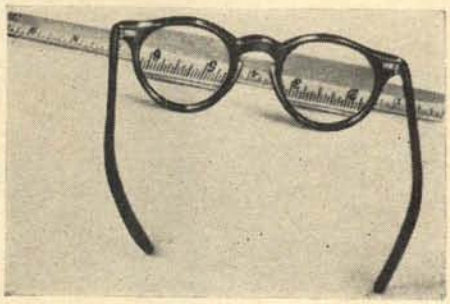


RAINBOW WOODS, dyed in gorgeous colors, are among the many new items listed in this 1963 catalog. Briar blocks for pipes, imported from Spain, exotic new veneers, including chen chen, coparose also are listed for the craftsman who works in wood. Among the hard-to-find items listed is lacquer for ball bats. "Catalog and Manual for Woodworkers" is 25 cents from Albert Constantine and Son, Inc. 2050 Eastchester Rd., New York 61.



New 8" Tilt Arbour Bench Saw

Save! Buy direct from manufacturer. Fast professional workmanship is yours with this precision built circular saw. Rugged quality assures complete accuracy on any job — mitering, grooving, cross cutting, ripping, etc. Its superiority over hand tool arrangements has been clearly proven. Features sealed-for-life ball bearings. Price is $42.50 express coll. Will pay for itself time and again on home projects. For information: Sutton Mfg. Co., Box 121, Buffalo 5, N. Y.

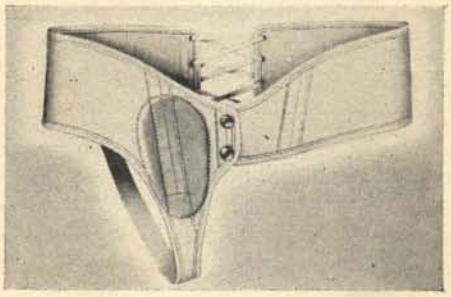


See Clearer Instantly

These magnifying reading glasses with high-quality, plano-convex lenses magnify fine print, make it easier to do close, precision work. Stylish smoke-color frames, metal hinges for long wear. Especially helpful for folks over 40 without eye disease or astigmatism. Money-back guarantee if returned postpaid within 30 days. Only $2.98 for glasses and attractive case. State age, sex. NEL-KING Products, Dept. WB-13G, 811 Wyandotte, Kansas City 5, Mo.

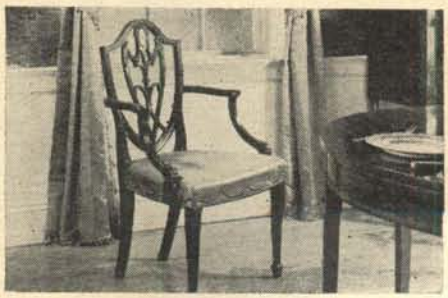
Build This Baritone Ukulele

This baritone ukulele is tuned and played like the first four strings of the guitar. A rich, mellow tone, from an instrument only slightly larger than the standard ukulele. An exciting project for the do-it-yourselfer. Sounds more like a guitar than a ukulele. Full size plans include detailed instructions, construction tips, sources for special woods and materials. Plans are just $2.00 from: Ukulele, Workbench, Dept. 1087, 543 Westport Rd., Kansas City 11, Mo.



Patented Rupture-easer®

No fitting required. A strong, form-fitting washable support for reducible inguinal hernia. Back lacing adjustable. Snaps up front. Adjustable leg strap. Soft, flat groin pad. No steel or leather bands. For men, women, children. Send measurement around the lowest part of abdomen and state right, left side or double. Single models, $4.95; double models, $5.95 postpaid. Piper Brace, Dept. WB-13, 811 Wyandotte, Kansas City 5, Mo.



Hepplewhite Chair Plans

For the craftsman who is interested in building the unusual, here are full-size plans for making a reproduction of a Hepplewhite chair. Plans were made directly from the original chair, built about 1790, now in a museum. Included are full instructions, sources for the special woods required. Plans show how to make chair with or without arms. Cost is $3.00 from Hepplewhite, Dept. 1088, 543 Westport Road, Kansas City 11, Mo.

Spinning Wheel

Part I

IN THE COLONIAL DAYS of early America the spinning wheel was the only means of making the yarns that were used to loom the homespun fabrics of the time. Almost certainly the spinning wheels of that era were as many and varied as were the makers. Certainly thousands must have been made by wheelwrights, chair makers, carpenters and joiners. No two of them were exactly alike, (as illustrated by our cover, the lead photo in this article and the sketch, Fig. 1), for they were handmade, laboriously turned piece by piece by the turner at his lathe, the power supplied by the turner's apprentice at the crank of the great wheel. But, they were all designed to spin wool and flax.

Old spinning wheels were solidly built and very durable. Those few survivors that have come down to us will still spin wool and flax after minor repairs have been made. The wheel detailed in this article is commonly referred to as the flax wheel. The dimensioned sketches were made from a very old wheel that required replacement of some parts long since lost or destroyed. If you are looking for a project that will test all the skills you have acquired, here it is.

You can, of course, begin by making almost any part, but usually it is best to start with the wheel—sometimes referred to as the great wheel. It is as beautiful an example of the craftsman's art as you will ever see. Fig. 2 details a segment of the wheel rim, a section through the rim, and one spoke, 14 spokes being required. The rim is built up from four pieces of selected stock, butt-joined, glued and doweled. Here comes the first precaution: Make sure that the dowels will be in the clear when the rim is turned, by trial-assembling the four pieces

SPINNING-WHEEL ASSEMBLY—

PARTS KEY

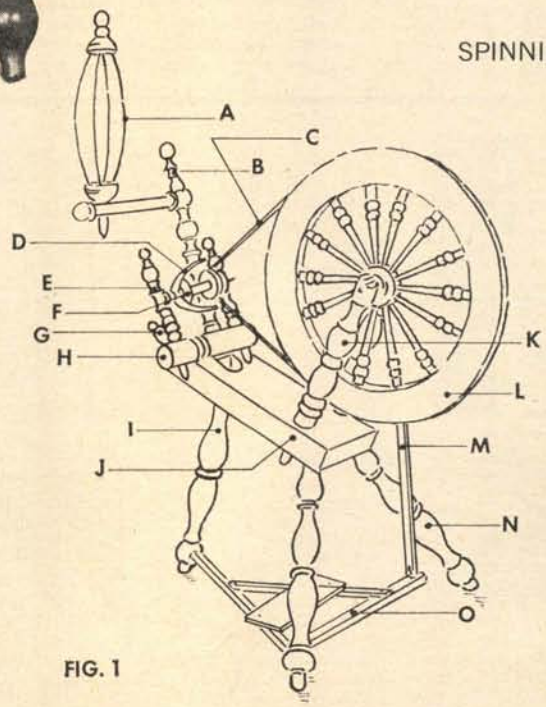


FIG. 1

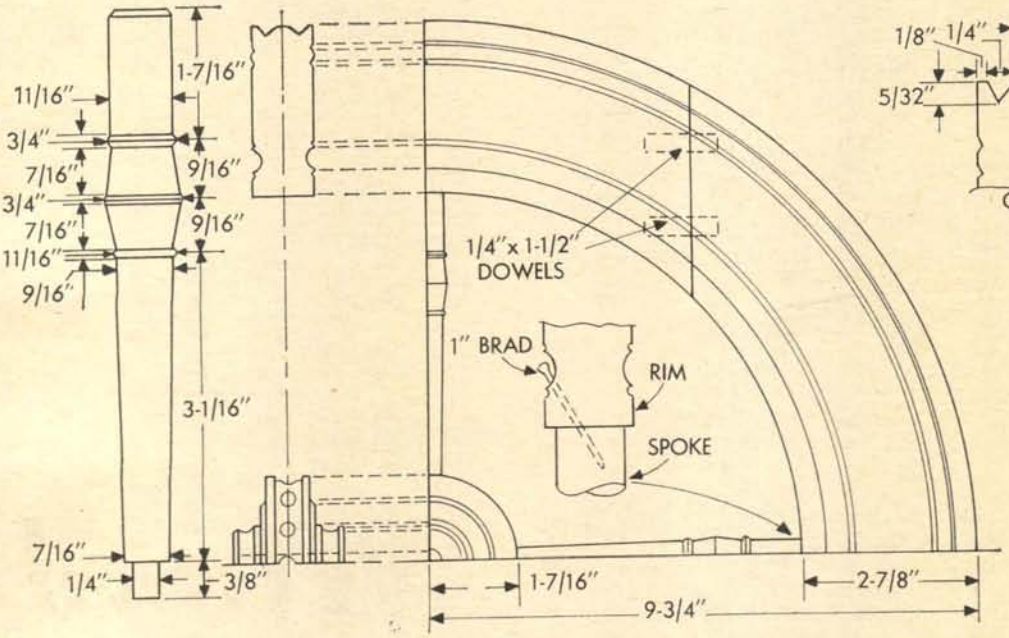
A—Lantern Distaff
B—Distaff Post
C—Driving Bands (Cords)
D—Flyer
E—Maiden
F—Bobbin
G—Tension Screw
H—Mother-Of-All
I—Back Leg
J—Table
K—Wheel Post
L—Wheel
M—Footman
N—Front Leg
O—Treadle

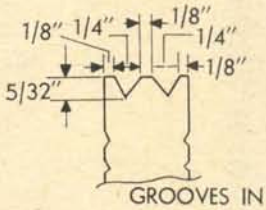
and striking concentric circles indicating the approximate inner and outer diameters of the rim. Then locate the dowel holes to clear.

Note that 1-in. quarter-sawed oak is specified for the rim. This is not a standard dimension, so purchase the next thickness, or 1⅛-in. stock. This will allow ¼ in. for turning to finished dimension. There is only one reason for specifying quartered oak. The original wheel from which the details are copied has a rim of fine quartered oak. This is the wood used in most of the rims of old wheels, as it does not warp as it ages.

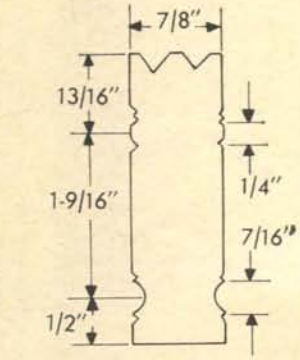
After gluing the four pieces as in Fig. 2, you glue the four-piece frame onto a piece of ¾-in. plywood with paper in the joint. There must be a uniform film of glue on both sides of the paper. Clamp lightly until the glue dries. Then bandsaw well outside the scribed line that indicates the outer diameter of the rim. Locate a center.

The rim is turned in two stages. It usually is impractical to try adapting a small wood-turning lathe to turning the rim, due to the great reduction in spindle speed that is required. So, you build a lathe for the purpose, Fig. 3, using two ½-in. shaft hangers, a 20 or 24-in. length of ½-in. steel shafting, two 5-in.-diameter faceplates, ½-in. bore, and a pulley made by turning a disk to 18-in. diameter from ¾-in. plywood. Assemble these parts, using a couple of short 2 x 6s with spacers as a base on which to mount the lathe and motor. Use a 2-in. diameter V-pulley on the motor which should be 1750 r.p.m. and at

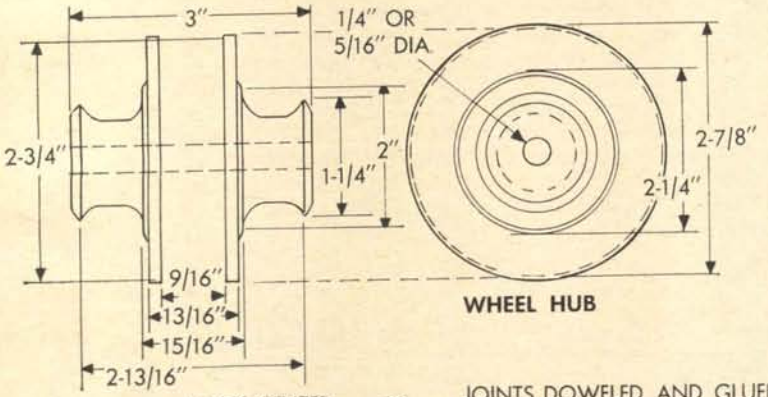




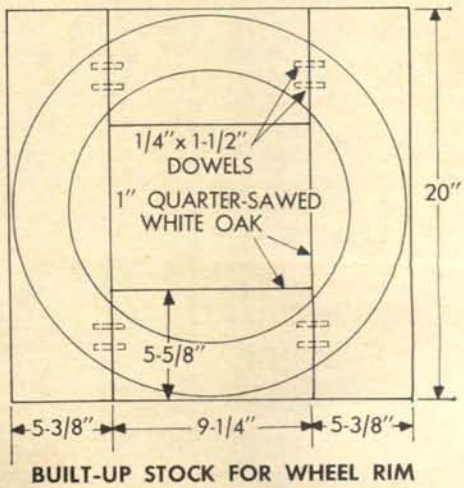
GROOVES IN WHEEL RIM



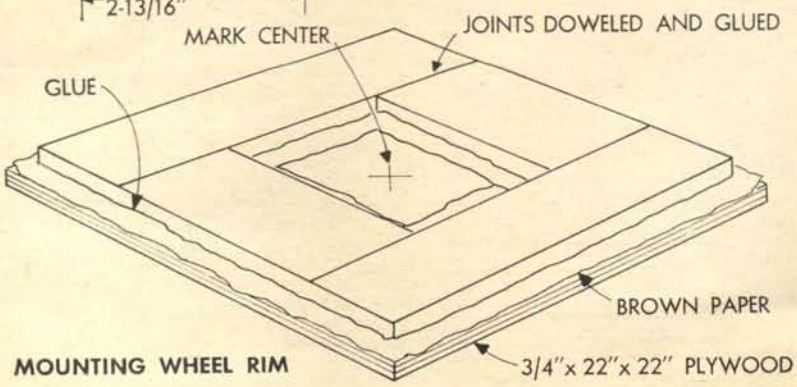
WHEEL-RIM SECTION



WHEEL HUB



BUILT-UP STOCK FOR WHEEL RIM



MOUNTING WHEEL RIM

FIG. 2

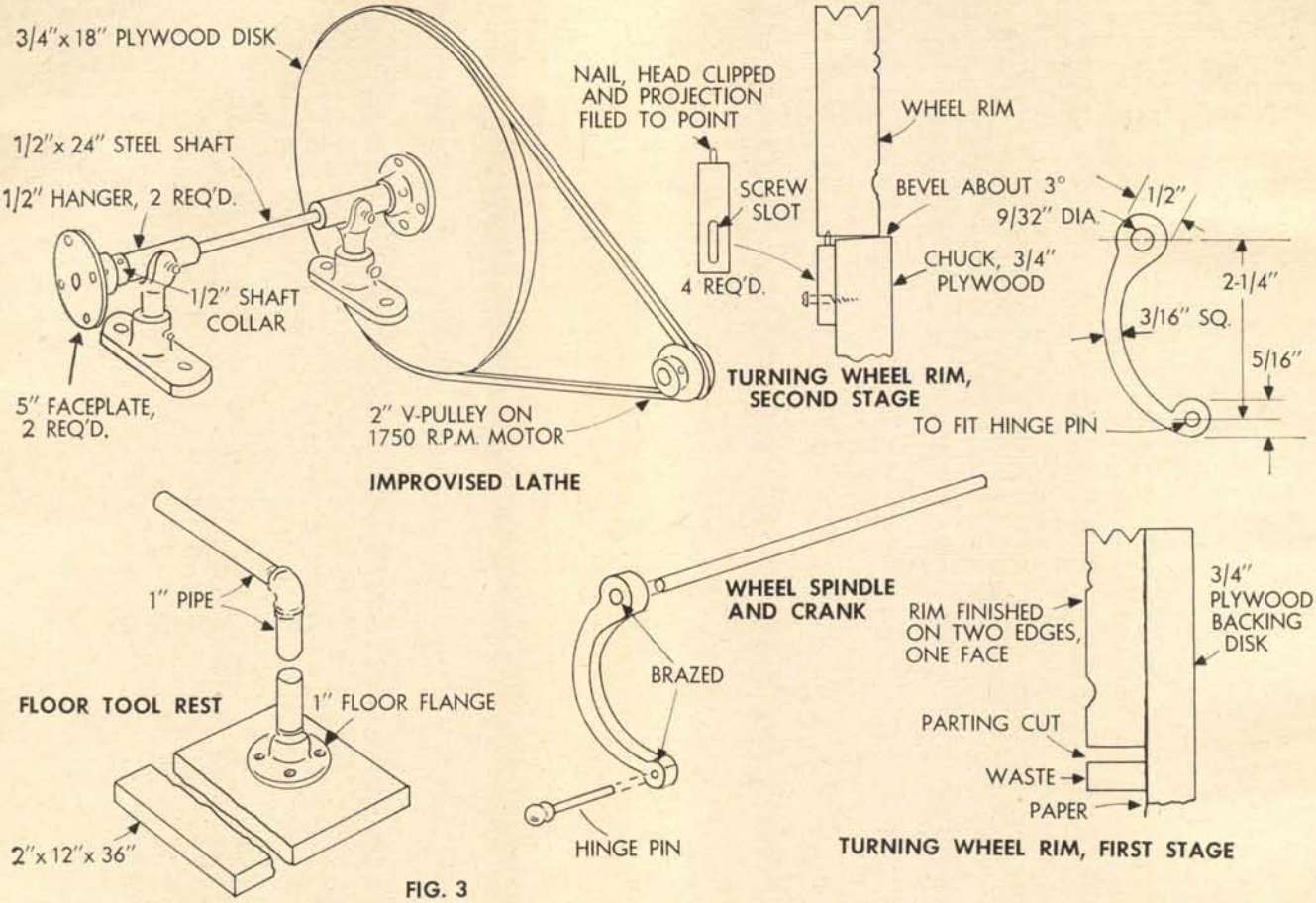


FIG. 3

least ¼ H.P. Improvise a floor tool rest as indicated. Now, center one faceplate on the back of the plywood disk to which the wheel-rim stock is glued. Then place a ½-in. collar on the end of the ½-in. shaft of the improvised lathe and locate it so there is absolutely no end play in the shaft. Slip the face plate on the shaft and lock it with the setscrew. Now you are ready to turn the first stage, Fig. 3. Determine the precise inner diameter of the rim and scribe a pencil line by turning the rim and holding a pencil on the tool rest. Do the same with the outer diameter. Then start the lathe and true the outer edge of the rim first to the line. Then move the tool rest, (you stand on it to hold it steady), so that you can work on the face of the rim. Run straight in with the parting tool, Fig. 3, keeping the cut in the waste with its edge on the scribed line that indicates the inner diameter. Take it easy on this cut, widening the cut a trifle to prevent the tool from binding. Run the cut straight in clear to the paper which is between the backing disk and the rim. Then face off the rim true and locate and scribe lines indicating the positions of the bead and concave cuts, Fig. 2. Take your time with these cuts, using a skew chisel, a roundnose tool and a Vee or diamond-point tool. It is important that all cuts be sharp and clean at the edges. Finally, cut the V-grooves in the edge, referring to Fig. 2 for sizes. These grooves take the cords, or belts, which drive the bobbin and flyer. This operation finishes the first stage of the rim turning. Sand the exposed surfaces of the rim before removing.

Next is the second stage, Fig. 3. Remove the rim and waste pieces from the backing disk by carefully prying with a knife blade inserted in the papered joint. Now, you make a special "chuck" for the final operation. Cut a ring off the backing disk with the parting tool, keeping the diameter slightly greater than the inner diameter of the rim. Then turn the edge of the disk—chuck—to a bevel of 3 or 4 degrees making the diameter at the back corner slightly greater than the inner diameter of the rim, Fig. 3. Turn the partially finished rim around so that the unfinished face is out, or towards you, and press it over the beveled edge of the chuck. Tap it on fairly tight, making sure it is uniform all around. Now make four dogs, or jaws, Fig. 3, from hardwood. Drive a small

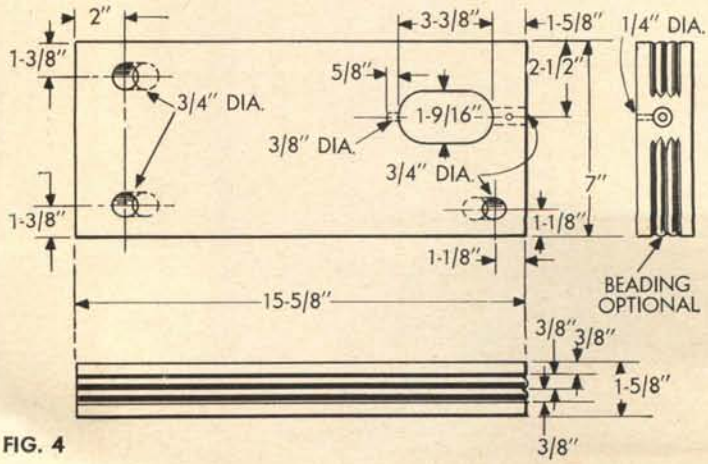


FIG. 4

finishing nail into the end of each, snip off the head and file the projection to a point. Locate the dogs 90 degrees apart around the rim. Drill holes for the holding screws, turn these part way in. Next, tap each dog until the pointed nail enters the wood of the wheel rim. Tighten the screws. Replace the assembly on the lathe, face off to final thickness and cut in the bead and concave. Sand the face smooth, then loosen the dogs and tap the work carefully off the chuck.

Now back to Fig. 2 and the spokes. Some very old wheels were made with 12 spokes and the right-hand detail in Fig. 2 shows the spokes so located. However, 14 spokes are recommended, as you get a better appearing, somewhat more symmetrical wheel.

Here is a thought about procedure that may be worth noting at this point: No matter how careful one is with dimensions it's easy to get off a little in turning the rim. And even if you came out right on the head, you will still have to do some hand fitting of spokes to rim. Note that the length of each spoke measured from the tenon shoulder is 5 9/16 in. When turning the spokes cut — part — them about 1/32 in. long so there is a little waste to work with in fitting. Yes, that's right, those spokes on the old wheel being copied were turned with a chamfer at the top end so the spokes won't splinter when they are tapped into place.

In any case it's a smart idea to turn the hub first, Fig. 2. Turn it from the hardest, toughest piece of maple, birch or cherry you can find. Drill through longitudinally for a ¼ or 5/16 in. spindle, then index and drill the 14 holes for the spoke tenons. As dimensioned in Fig. 2, the hub is a trifle over the original in width. When fitting the hub between the wheel supports—or stands —this "overage" gives one something to work with.

Now to the spokes again. The originals were turned from maple and beech and obviously were made from carefully selected stock. Use the best materials you can locate and rip the pieces from the solid stock; don't use dowel stock. Rip the pieces at least ⅛ in. over, (the greatest finished dimension is ¾ in. in section), and allow at least ½ in. at each end of each piece for parting, (cutting off to finished length). Take special care in centering and turn your lathe at least 2,000 r.p.m. for the roughing-into-round cuts with the gouge. Finish with the skew chisel with the lathe turning at least 3,000 r.p.m. Good maple turns beautifully with a skew chisel at these speeds, or even higher, but the chisel must be handled skillfully as otherwise it may dig in and spoil the work. If you are careful you'll get a finish that needs no sanding. Old-time turners took a dim view of sanding

(Continued on Page 50)

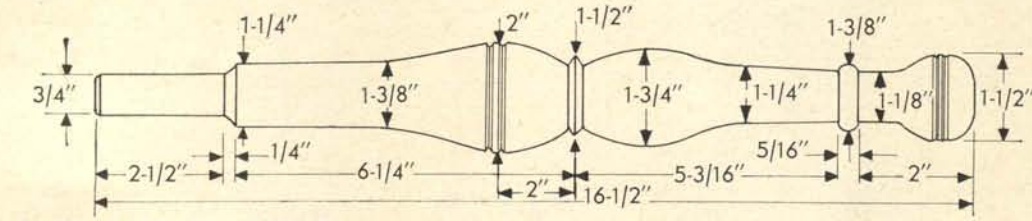
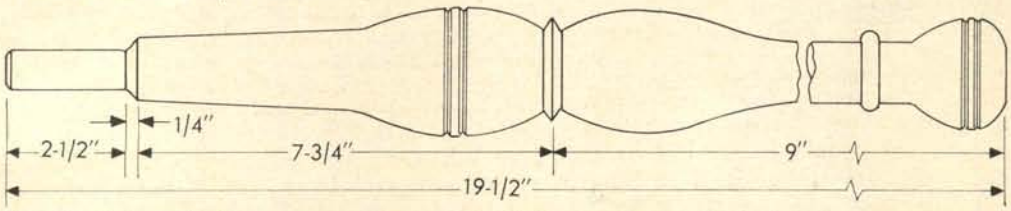
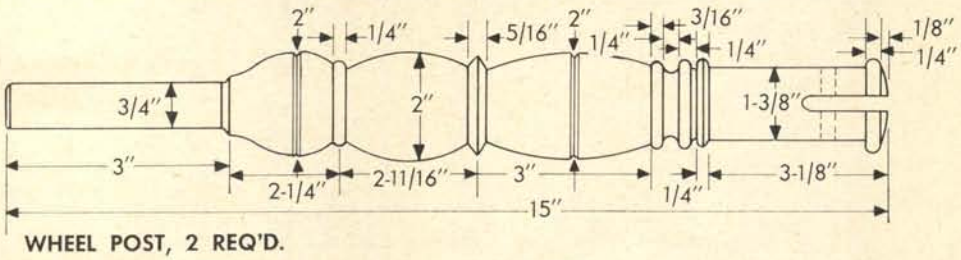


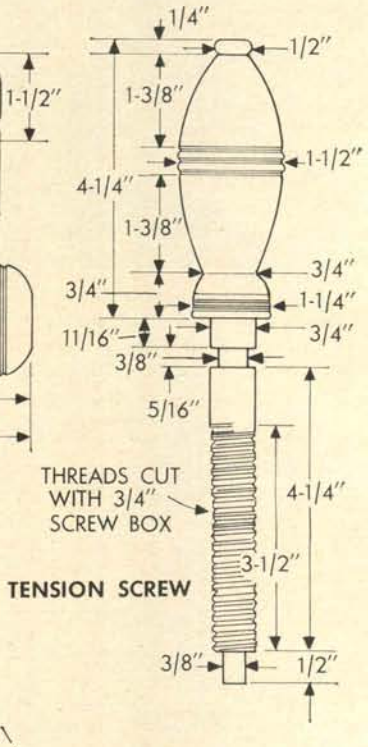
TABLE BACK LEG, 2 REQ'D.



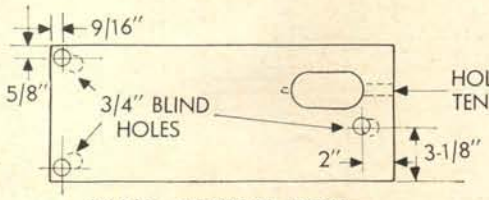
FRONT LEG, 1 REQ'D. DIMENSIONS NOT GIVEN, SAME AS ON BACK LEG



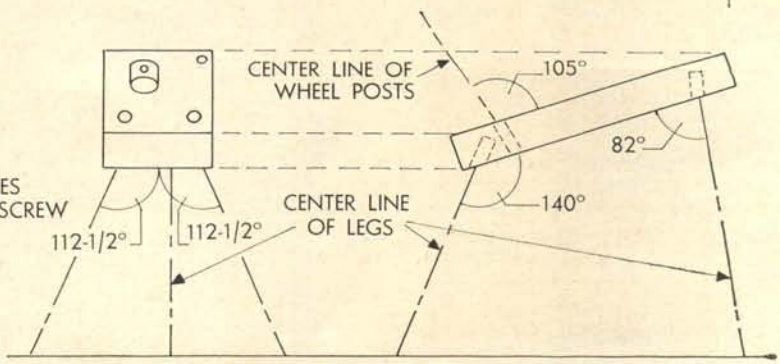
WHEEL POST, 2 REQ'D.



TENSION SCREW



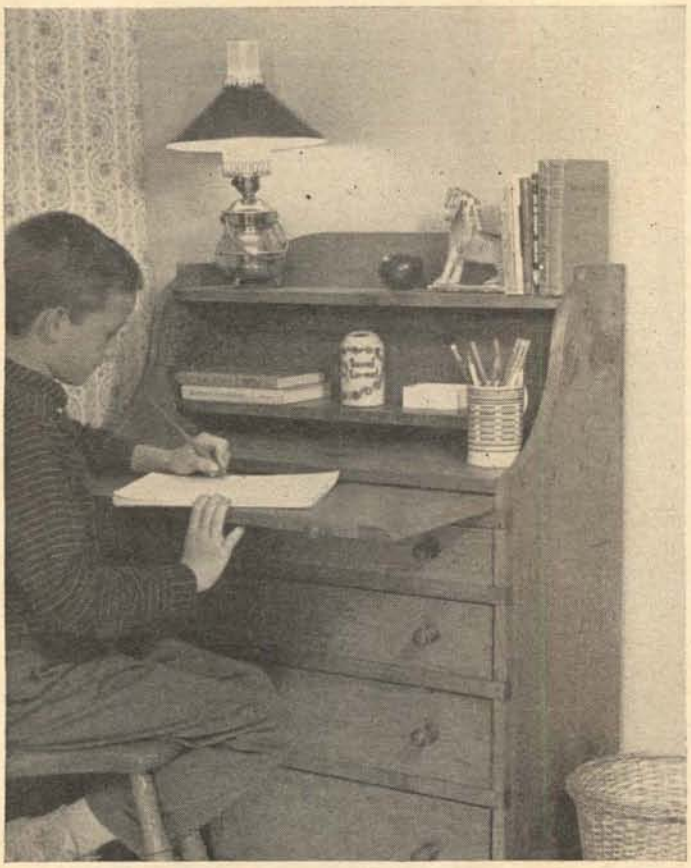
TABLE, BOTTOM VIEW



TABLE, BACK AND SIDE VIEWS

FIG. 5

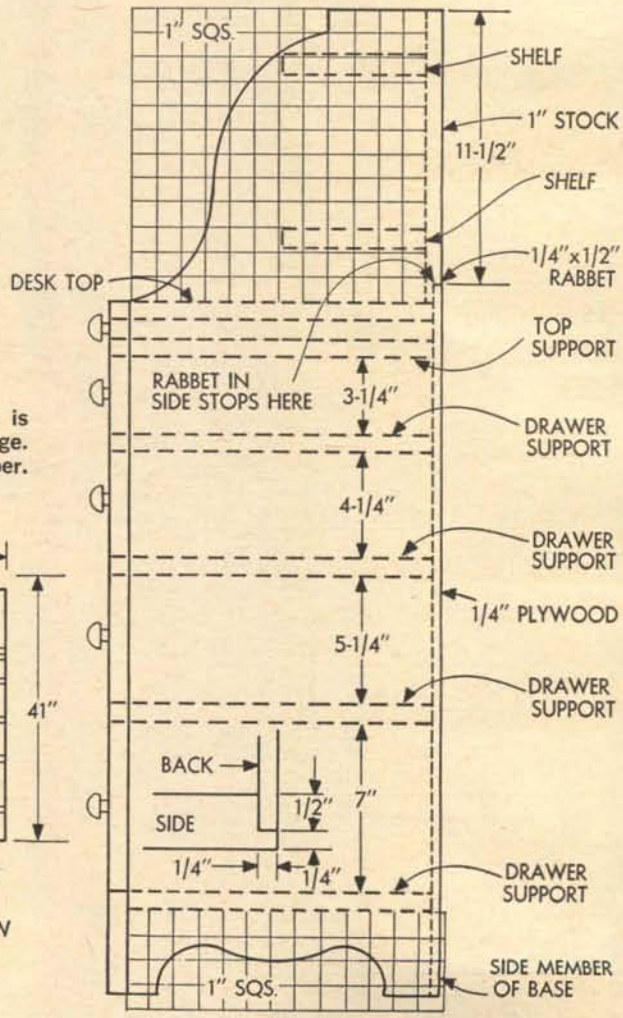
Colonial Desk-Chest

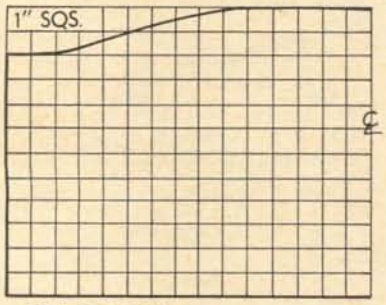


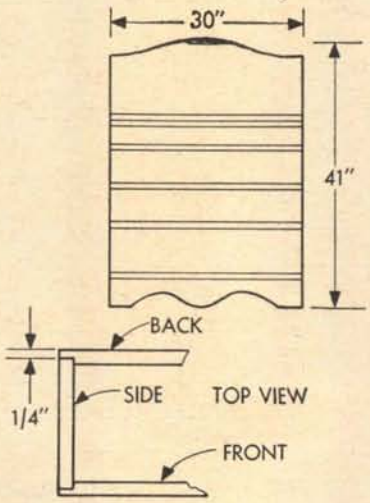
1. Styled in authentic Early-American design this desk-chest is easy to build, provides study area, plus ample drawer storage. "Antique" look comes from use of No. 2 Idaho white pine lumber.

FOUR FULL DRAWERS of storage space are your bonus when you build this desk designed for us by the Western Pine Association. An authentic "antique" look is built-in to the unit by utilizing inexpensive No. 2 common Idaho white pine or Ponderosa pine. The No. 2 contains just enough firm knots and small characteristic markings so that it stains and finishes beautifully.

The complete assembly is made with glue and nails, and all joints are simple butt joints with the







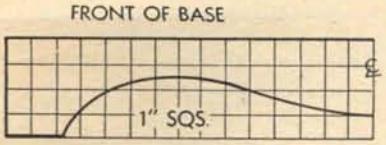
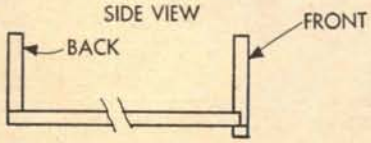
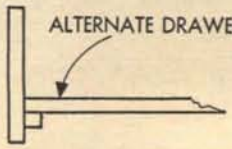


FIG. 2

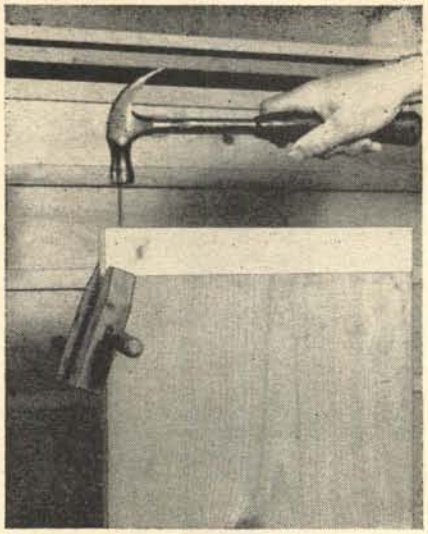




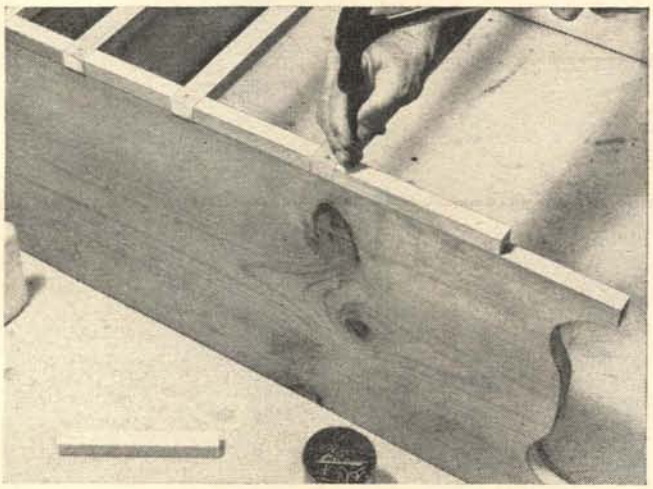
exception of the rabbets used at the front drawer corners. The drawer dividers, Fig. 4, are "let in" to the front edges of the sides in the approved colonial manner, but strips of ¾ x ¾-in. stock are nailed to the edges to provide the notches. To prevent the edges of the pull-out writing surface from splitting, nail cleats as indicated in Fig. 3. Drawer guides are 1-in. strips nailed to the inner surfaces of the sides, squared to the front edges, Fig. 5. To further give the unit an authentic look, "antique" the nails by squaring the heads to give them a "hand-forged" look. Hold the heads on a steel surface, strike them to make two flat edges, then turn the nail 90 deg. and tap the nail head again. Round off the heads slightly with a file or grinder and they will look as in Fig. 7. Where the nails will not show, as in the case of the plywood back, regular nails can be used.

You may wish to cut dadoes in the drawer sides to accept the bottoms. Be sure to allow for the extra width the dadoes require, but cut the bottoms somewhat smaller than necessary. This will allow for expansion and contraction. A tightly-fitted bottom may force apart the joints when it expands.

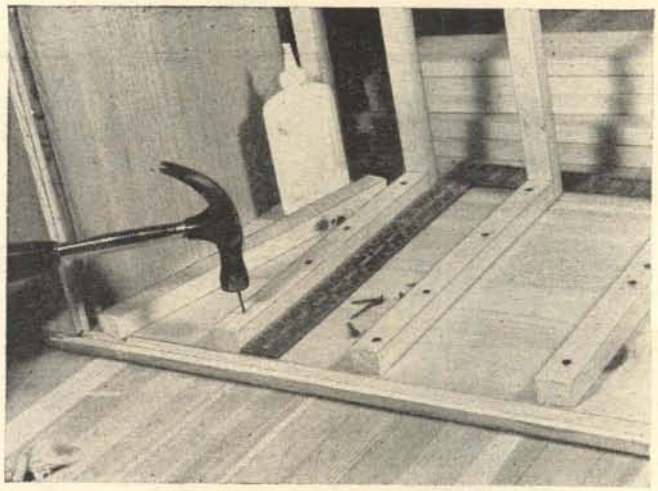
The pine stock will accept finishes beautifully. First select your stain; hues that are more brown than red look better on colonial furniture. Paste wax can be applied over the stain, for a low-luster finish that is beautiful, but not too resistant to damage. If water or alcohol will not be a problem apply several coats of 4-lb. shellac thinned with one or two parts of denatured alcohol. If the desk will receive much rough usage, one of the newer synthetic varnishes is recommended. Use a low-luster finish, so the wood seems to have no finish at all. △ △



3. End cleats are nailed to ends of pull-out writing surface to prevent pine from splitting. Cleats are glued and nailed.

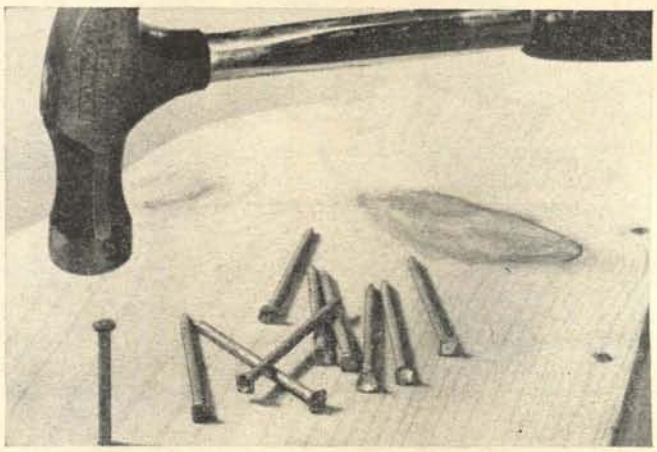


4. Old craftsman's trick of notching sides of chest so drawer dividers fit neatly is simplified by utilizing strips of stock nailed to front edges of the sides as indicated.



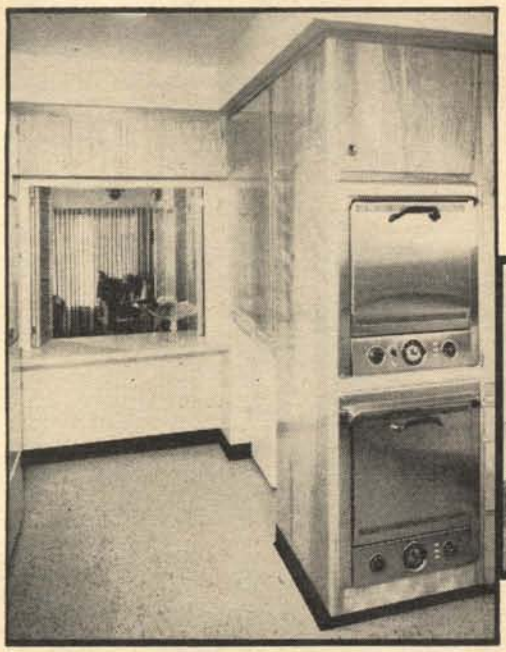
5. Drawer guides are 1-in. strips nailed and glued to inner surfaces of sides. Use square to make sure these supports are at right angles to front, and exactly parallel.

6. If desk-chest is not to be exposed to effects of alcohol or water, excellent finish is shellac applied in many coats. Thin shellac with alcohol, sand between coats.



7. Entire assembly is with nails and glue. Give unit authentic antique look by squaring heads of nails with hammer so nails have appearance of authentic hand-cut nails.

Building Kitchen Cabinets



BUILT-IN OVENS

RALPH TREVES

Part IX

FOR COMPLETE EFFICIENCY in your remodeled kitchen, a built-in oven should be included. Such ovens are available in gas or electric models, with a host of options and special features. Some have separate broilers, others have powered rotisseries, and even slide-out interiors that are removable for cleaning.

An oven need not be located close to the sink-range-refrigerator work center. Almost any corner of the room will do, and it can be fitted in a room divider, or possibly recessed into a wall that is above a stair well or is in a closet. This sort of installation can add several square feet of valuable floor space to a crowded kitchen.

For the installation shown and described in this article, the oven is built into a separate cabinet,

There is a great variety of built-in ovens, each having special features. Some have solid doors, others have glass panels. Powered rotisseries are featured in some, others have cabinets that slide out for easy cleaning. Almost all are available in both gas and electric models. Ovens shown, in top row, left to right: Thermador, Kelvinator, Westinghouse. Above, Magic Chef. At right, Caloric and Waste King. Most models of ovens have countertop ranges to match.

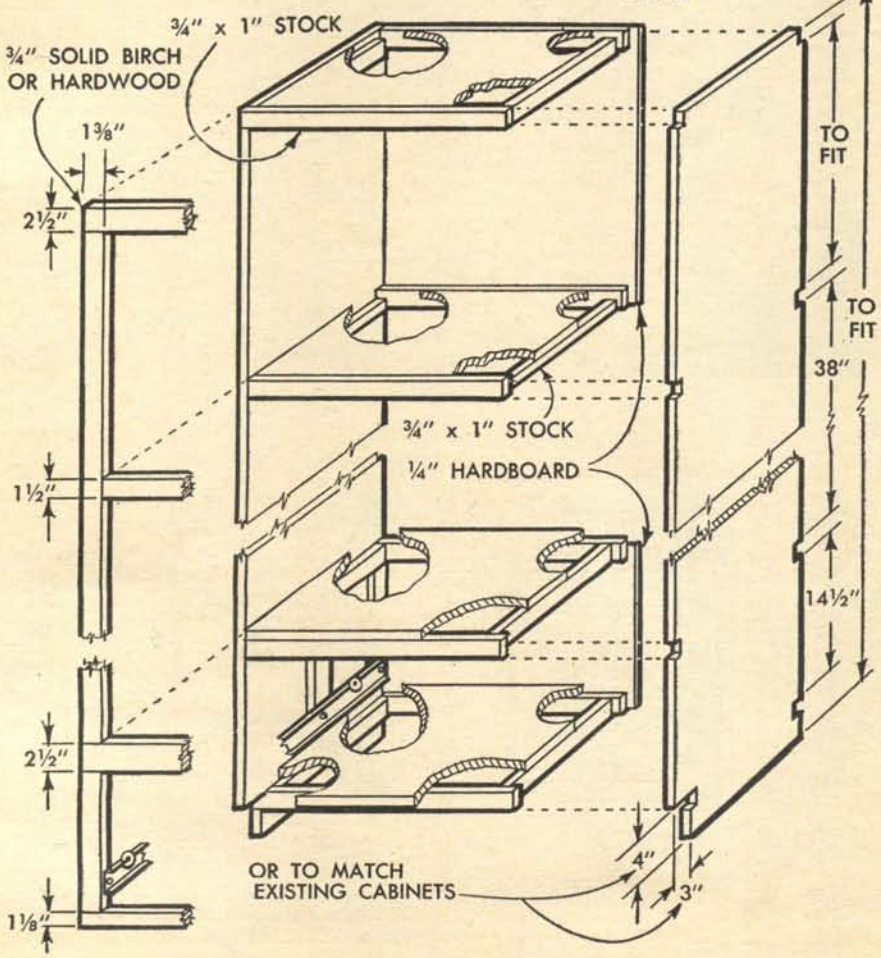
1. Oven installed in WORKBENCH kitchen is Caloric model with separate broiler beneath it. Oven is fueled with gas.

Fig. 1, that has a storage cabinet above with doors, and a deep drawer beneath for storing roasting pans and other large pieces of kitchen equipment. The arrangement of the kitchen, planned by Caloric Company designers as a "color-coordinated" kitchen, emphasizes the selection of colors for the basic kitchen appliances, range, oven, sink and range hood. The colors then can be matched for your automatic dishwasher, refrigerator and other units.

The oven cabinet shown is soffit height, placed at the end of a row of base cabinets, in a corner. Despite its size, this cabinet actually is easier to build than some of the others already described in this series. The sides of the cabinet are ¾-in. plywood, joined with shelves, (one is extra strong to support the heavy oven), and the facing of the cabinet is solid birch strips, as with the other cabinets in the kitchen. If one, or both, sides of the cabinet will be visible—as one side is in Fig. 1—use plywood faced with birch or a hardwood to match the wood used on the other cabinets. If you plan on using plastic laminate on the cabinet sides, fir plywood can be used. Easily-cleaned laminates are available in various colors in wood-grain patterns.

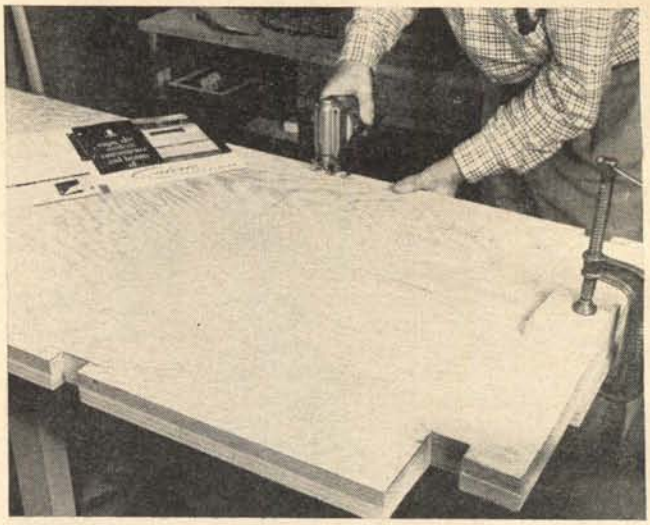
The cabinet must be wide enough to accommodate the oven. In the case of the Caloric models, Figs. 2 and 7, the minimum **inside** width is 22 in. Thus, the outside width, allowing ¾ in. for each side, would be at least 23½ in. However, as you will need some clearance for ease of installation, make the cabinet 24 in. wide. The trim that fits around the door, or doors, of the oven will cover any slight gap produced by making the oven opening oversize. Also, if the cabinet is located in a corner, as in Fig. 1, there must be some clearance between the door and the wall. Also,

FIG. 2

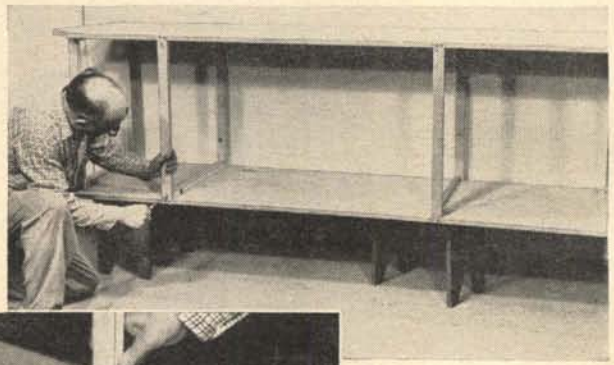


3. Measure proposed location of oven to make sure there is ample room for installation. Check at various levels on wall.

4. Wall may be badly out of plumb, as in our installation, so plaster can be trimmed away to provide sufficient room.



5. Notches are cut in the side panels for supporting cross members that hold panels together and are shelf supports.



6. When oven cabinet is partly assembled, place it on boxes or horses to position it at convenient working height.

as in Fig. 9, about 1 in. space should be allowed between the cabinet and the wall so the cabinet can be easily installed, and moved to level and plumb it.

First step in making the oven cabinet is to measure the proposed location to be sure the cabinet will fit, Fig. 3. Measure at several points. In our setup the wall near the floor curved out and it was necessary to chisel away the plaster, Fig. 4. If you chisel down to the lath, you can apply a thin coat of plaster to seal the hole.

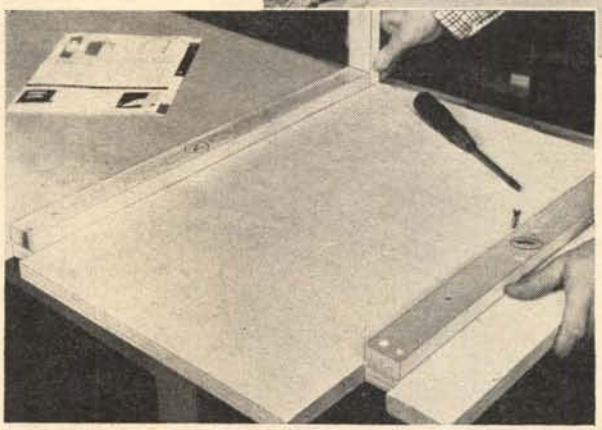
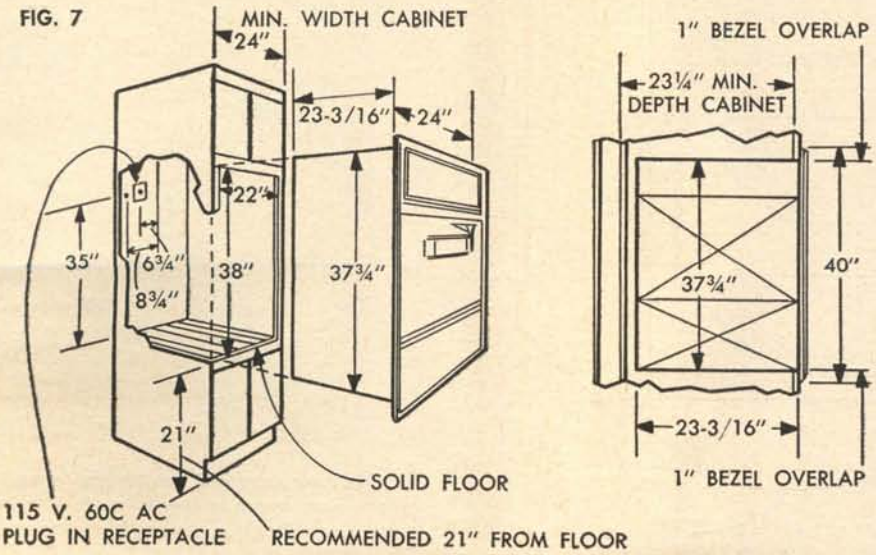
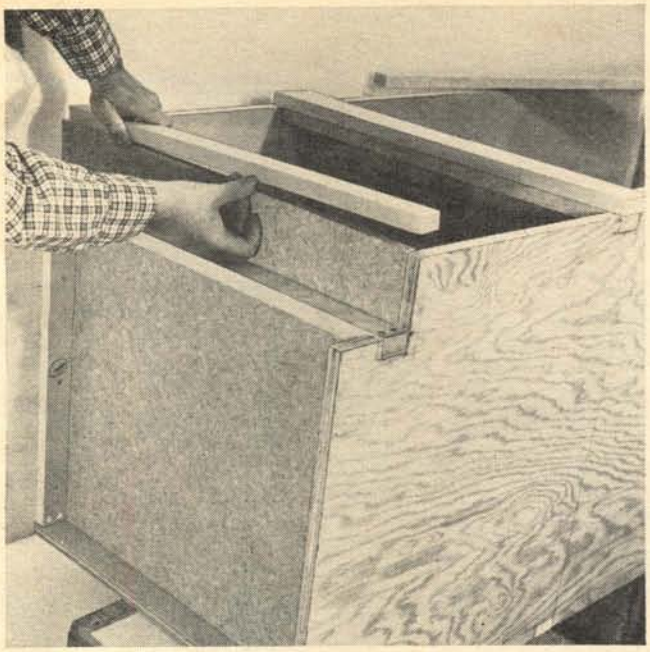


FIG. 7



However, the solid side of the oven cabinet will cover the opening. When you have determined the cabinet width, height from floor to soffit or ceiling and depth (24 in. is correct here to keep it aligned with other cabinets), cut the two plywood sides. The two pieces then are sawed the correct length. Make the pieces a couple of inches shorter than the length from floor to ceiling or soffit, then trim the open space at the top with molding. If the cabinet is made the full height, it will be impossible to raise it in place. If you do want the cabinet the full height from floor to ceiling, it must be built almost in place and assembled in a vertical position.



8. Wood facings should be kept absolutely square at all corners. This is for appearance and to assure doors and drawer fit well.

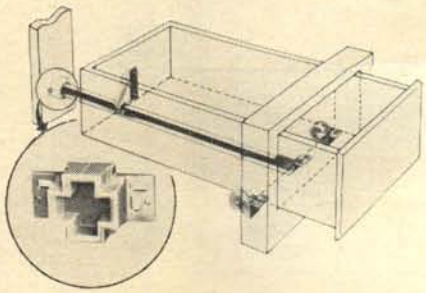
9. Cabinet is pushed into its space for checking fit. Leave at least 1 in. space at end wall for clearance.

Cut the toe space in the side members, then the notches for the cross-members between the sides, Figs. 2 and 5. Strips of 1 x 2 stock are screwed to the inner surfaces of the cabinets sides as indicated, Fig. 6, then the cross members are attached to hold together the sides. For easier working place the assembly on boxes or horses, Fig. 6.

The oven should be located at a convenient height. This will vary, depending on whether or not the oven has a separate broiler compartment and other factors. For the Caloric unit, which does have a separate broiler section, the recommended oven height is 21 in. above the floor, Fig. 7. Each make and model of oven will have a specification sheet that will provide the recommended measurements, such as furnished for the Caloric unit that is shown in Fig. 7.

Install shelves of plywood or particle board, then attach the hardwood facing to the cabinet, Fig. 8. The back of the cabinet in the area of the cabinet and drawer can be covered with ¼-in. hardboard, but the space immediately behind the oven must be left open for connecting gas and electricity. These services must be roughed in before the cabinet is fitted in place and leveled and plumbed, Fig. 9. A gas oven will require a 110-volt circuit for lights, timer and other accessories, while an electric oven will require a three-wire 220-volt circuit. Fitting the oven into the cabinet must be done according to the manufacturer's instructions, regarding shimming and locking in place. The drawer in the cabinet can be fitted with roller slides, or with a low-cost center unit, as shown in Fig. 11. △ △

10. Installed cabinet is complete with oven in place, doors on cabinet above, with large slide-out drawer below. Side of cabinet can be hardwood-faced plywood, as here, or fir plywood can be faced with plastic laminate or other material.



11. Easily-installed plastic end bracket quiets drawer action on this center guide made by Amerock Co., Rockford, Ill.

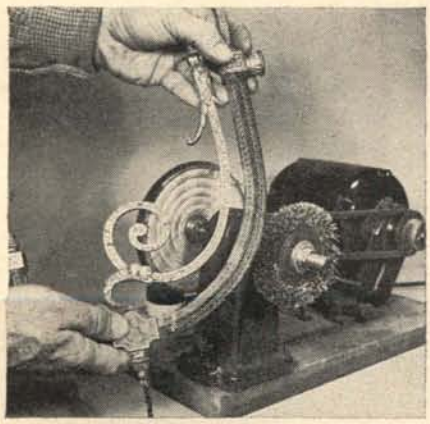
Updated Gas Light

The charm of yesteryear is combined with modern electrical convenience in this lamp that will add a pleasant glow to any room.

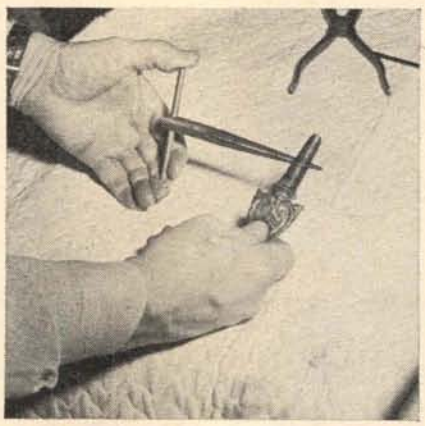
MANY OF THE OLD gas lamps were beautifully made, often being cast of solid brass. Some were silver or gold plated and of good design, despite the intricate decorative patterns applied to them. When converted for use with electricity they make handsome additions to rooms of period or contemporary decor.

If you do not have a couple of the lamps stored away with family possessions in the attic or basement, look for them in second-hand shops or at rummage sales. Our photos show the conversion of one type of gas lamp; other types will present different problems. Basically, the gas jet is removed and replaced with a short length of electrician's pipe on which is screwed the lamp socket. Wire is drawn through the gas line inside the fixture and fitted with a plug, or, as in the lamp shown, pulled through the back of the fixture and connected directly inside a receptacle box in the wall.

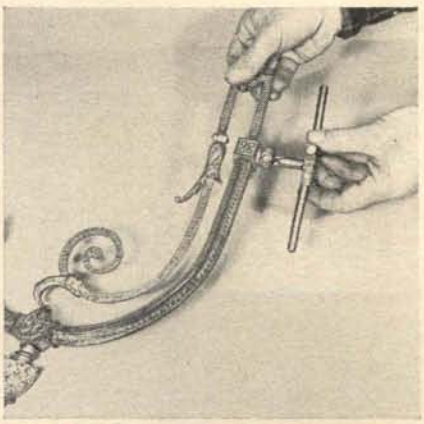
First step in the conversion is to clean the fixture. Use hand or power wire brushes, buffing wheels and polish to bring the metal to a high luster. Spray the cleaned fix-



First step in salvaging an old gas lamp is to clean it well, using wire brush and buffer. After it has a high polish, protect it with lacquer.



Holes in gas valve probably will have to be reamed to larger size to permit wire to pass through. Use single-strand wire, rather than lamp cord.



Original pipe nipple used for gas may have to be removed, hole drilled and tapped for larger pipe to accept necessary electrical wiring.

NEW "Do-It-Yourself" Idea For Home Craftsman

MAKE YOUR OWN CIGARETTE LIGHTER

Imagine the thrill of creating your own **original** Cigarette Lighters using these AUTOMATIC "Insert" Units. Formerly sold only to established manufacturers; Professional lighter units are designed for **easy** insertion into bases you make from wood, plastic, ceramic, cast metal, etc. Or, turn a drilled 8-ball, beer can, sports trophy, knick-knacks, or other objects around home into decorative cigarette lighters. You'll dream-up hundreds of ideas for bases. Brass-plated, fully automatic, round lighter unit is 1½" in diameter. Comes complete with matching cup for mounting. Only $1.98 ea. SPECIAL 2 for $3.50, All Postpaid. Money-Back Guarantee. Order Now!

EMPIRE ENTERPRISES DEPT. AW-2
398 Broadway - Newburgh, New York

DOLLS!

learn world's most fascinating business

We teach you to make, repair, and sell all kinds of Dolls and accessories. Study at home. **Excellent money making opportunities** in every locality. Start a business part or full time. **Easy to learn. Low monthly payments**—many pay for their course out of earnings made while learning. We show you how. May we send **FREE** and without obligation our informative booklet? No salesman will call. For an exciting future, **ACT NOW!**

NORM and SUE MORRIS
LIFETIME CAREER SCHOOLS
11824 SAN VICENTE BLVD., Studio WB-13
LOS ANGELES 49, CALIFORNIA

WOODWORKERS, copy this quaint E. American dough board, c 1760, 26"l, 16"w, 24"h, with full size patterns, authentic Colonial detail, and all shop cutting angles. Plan is nationally advertised, fully guaranteed, with complete antique finish, "distressing" tips, and a Free copy or our new Plans "Bulletin" for only—$2, Old South Patterns, PO Box 11143, Charlotte 9, N.C.—or send 25c for new Plans "Bulletin" of 98 E. Amer. & Colonial gems you can make.

JOINTER OWNERS

"HERE IS GOOD NEWS FOR YOU"

1000 ACCURACY

NOW! At last you can set your knives to a tolerance EQUAL to or BETTER than the original factory setting with this precision KNIFE-SETTING GAUGE

$2.95 Postpaid—Check, Money Order or C.O.D. plus charges.

CHECK THESE FEATURES: Minimum setting time • True horizontal alignment of knives with rear table • Correct height of rear table in 30 seconds • This instrument shipped subject to your approval on our 10-day money-back trial offer.

CRAFTLINE TOOLS, DEPT. W
203 So. Sierra Vista • Monterey Park, California

90 PATTERNS LAWN ORNAMENTS·NOVELTIES

FULL SIZE patterns up to 20" high of Dutch Boy and Girl, Dwarf, Penguin, Fishing Boy, Animals, Birds, Novelties and many other popular items. Easy to make and sell. Just trace, cut out and paint. Send $1.00 today for the LAWN ORNAMENT PACKET containing all 90 patterns.

MASTERCRAFT PLANS, Dept. J2B
7041 Olcott Avenue Chicago 31, Illinois

Weave Rugs EASILY AT HOME

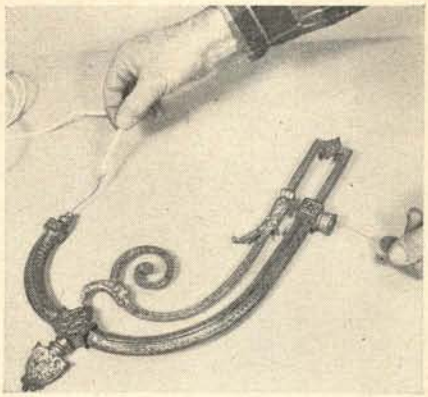
MAKE BIG PROFITS—Full or spare time business right in your home. YOU can weave beautiful, serviceable rugs on low cost loom that comes threaded, ready to weave—including necessary accessories! Just a few days weaving will pay cost of loom. Send for FREE loom folder, sample card, and low prices on warps and supplies. Get started now on this easy way to year around extra income!

OR. RUG CO. • Dept. 1363 • LIMA, OHIO

HOW TO PUBLISH YOUR BOOK

Join our successful authors in a complete and reliable publishing program: publicity, advertising, handsome books. Speedy, efficient service. Send for **FREE** manuscript report & copy of **Publish Your Book.**

CARLTON PRESS Dept. WOB
84 Fifth Ave., New York 11, N. Y.



Length of spring wire is used as "snake" to pull wire through gas fixture. Sharp curves and angles may cause some trouble here.

ture with clear lacquer from an areosol can to protect the finish. If you have the luck to find a gold or silver-plated lamp, only polish is required to restore the shine. While the lamp is disassembled for cleaning, ream out the opening in the gas valve so it is large enough to accept two plastic-insulated wires. Do not use regular lamp cord, as its insulation is too likely to be damaged inside the fixture. When the valve is replaced turn it to the "on" position so the opening is in line with the gas line, to allow the wire to pass. If the pipe fitting that goes to the wall, or to a wall plate as in the example shown, is too small to permit the wire to pass, enlarge the opening and thread it for a larger pipe. Use a steel spring wire to "snake" the wire through the fixture, as the sharp bends in most fixtures will prevent the wire from just being pushed through. If you wire the lamp to a receptacle box in the wall, a canopy switch can be fitted in the wall plate.

If your gas light does not have a shade or globe, purchase one that is in keeping with the period and style of your "new" wall lamp. △ △

Final step is to fit socket in place, insert appropriate bulb and fit on shade. Latter should be of a shape compatible with original lamp.

"MY REAL EYES!"

That's what Bert Caldwell, famous hobbyist of the Bronx, New York calls his MAGNI-FOCUSER

Mr. Caldwell spends his leisure time constructing scale models of old railroad cars. His other hobbies include woodworking, metalworking, photography, photo-developing and the study of plant life.

"All of this would not have been possible," says Bert Caldwell, "without my MAGNI-FOCUSER. I call it 'My Real Eyes.'" Mr. Caldwell goes on to say, "I was out of hobby work for several years because I just couldn't see fine detail any more. Then someone recommended MAGNI-FOCUSER and I was back in business. MAGNI-FOCUSER is a binocular magnifier that gives 3-D magnified vision. I wear it over my eyeglasses. This leaves both my hands free for all the intricate work I do. MAGNI-FOCUSER acts as an eyeshade, too, by shutting out all overhead and side glare. To resume normal vision, I merely raise my head slightly." MAGNI-FOCUSER comes in 3 models—1¾" magnification at 14", 2¼ at 10", 2¾ at 8". **Order from EDROY PRODUCTS CO., Dept. A, 480 Lexington Ave., New York 17, N. Y. Costs only $12.50. Absolute money-back guarantee if you're not delighted.**

Whatever Your Craft Or Hobby

CERAMICS
JEWELRY MAKING
LAPIDARY
LEATHER-CRAFT
METAL-CRAFT
MODEL MAKING
MODEL RAILROADS
NEEDLE-CRAFT
PAINTING
PLASTER-CRAFT
RE-WEAVING
SCULPTURE
SHELLCRAFT
STENCIL-CRAFT
WEAVING
WOOD-WORKING

"Dowl-it" Doweling jig The ONE and ONLY **SELF-CENTERING** DOWEL DRILL GUIDE

The "DOWL-IT" assures perfect automatic centering and alignment of dowel holes in 5 drill sizes. School shop tested and approved. Heat treated drill guides. 2" jaw expansion. Write for FREE Literature Dept. SS-57

Only $8.95 POSTPAID

"Dowl-It" Company
515 N. Hanover St. — Hastings, Mich.

Use Appliance Motors in the Workshop!

Now you can take end-mounted motors (major appliance type) and use them with your power tools. It's economical and easy with a sturdy LEWACO Heavy-Duty Motor Mount. Only $1.75 ppd. Order W-104 from: LEWACO, Box 237, Mound, Minnesota.

HERE'S HOW TO GET
CUSTOM
FLUORESCENT LIGHTING
. . . at a fraction of the usual cost!
DO-IT-YOURSELF KITS DIRECT FROM MAKER
Superior lighting for homes, workshops, special effects. Beautiful aluminum construction. Create quality crafted fluorescents in minutes. COMPLETE WITH STEP BY STEP INSTRUCTIONS. Satisfaction guaranteed.

HIGH LIGHT OUTPUT
2 lamp 20 watt—24 inches long, easily hung from cup hooks or chain. Gives 250% more light than 100 watt bulb. Only $3.95. Add $1.90 for 2 7500 hour lamps.

CONVENIENT PLUG-IN
Push button or Automatic start 15 watt — 19 inches long. Mounts in a jiffy—under cabinets, over counters and sinks, on walls. Has 6' cord and plug. Only $2.59. Add 95c for 7500 hour lamp.

Include 65c for postage and handling.
Others from $1.95. 10c brings complete catalog of kits, fixtures and parts.
SHOPLITE CO.
650-B FRANKLIN AVE. NUTLEY 10, N. J.

I'LL FINANCE YOU
. . . in your own
SCREEN PRINTING BUSINESS
Make Your Home Your OFFICE
Yes, I'm prepared to train you and establish you in your own spare time Business...even if you are now employed. I'll give you Credit, Financial Assistance. Mail Coupon Now!
PRINT WITHOUT A PRINTING PRESS!
Amazing but true! The Screen Print method requires no expensive Press and can be done in your own home. Start in Kitchen, Spare Room, Garage! Easy! Fascinating!
PRINT BEAUTIFUL SIGNS, POSTERS, BANNERS, FABRICS – anything in hundreds of colors. Use fabulous new "glowing" fluorescent colors. Can be seen for miles. No Art ability needed – we supply everything.
HELP SUPPLY DEMAND IN YOUR AREA! Just about every kind of business (drug, department stores, hardware, liquor stores, gas stations, theaters, jewelers, mortuaries, auto dealers, florists, beauty shops, real estate, etc.) can use Screen Printed things to increase business.
SOME $100 JOBS USE LESS THAN $10 WORTH OF MATERIALS . . . you pocket the difference for your labor and know-how. $400.00 A WEEK EARNINGS POSSIBLE? Yes, some earn less, but Mr. J. T. Anderson reports he earns over $400.00 a week printing Greeting Cards certain times of year. Get your share Now. Mail Coupon Today!

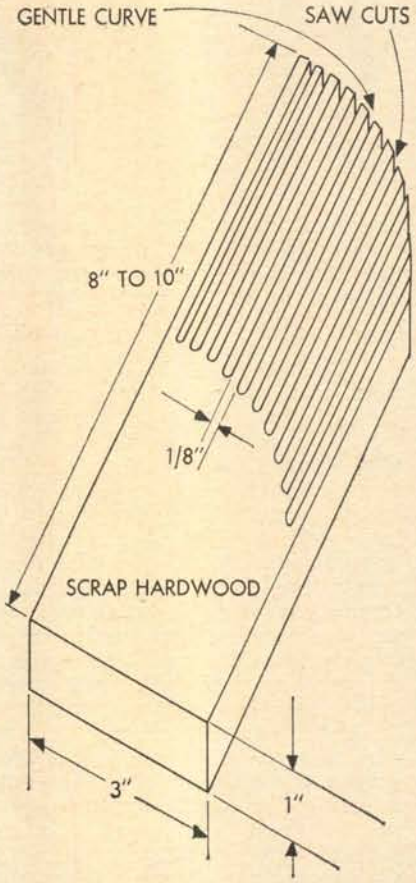
FREE SAMPLES – MAIL COUPON NOW
Mr. C. J. Nowak, Screen Print Co., 15127 S. Broadway
Los Angeles 61, California, Dept. J791
Dear Mr. Nowak! I am genuinely interested. Please rush your "FINANCIAL ASSISTANCE PLAN" Revealing Screen Print HOME BUSINESS Details, Real SAMPLES, and "HOW TO" BOOKLET. I am under no obligation now or ever.
Name _____
Address _____
City _____ Zone ____ State _____

Build This Beautiful
Grandfather Clock
Send only $1.00 for complete plans and instructions plus catalog of clock movements, dials, case plans and kits for building Grandmother, Grandfather, Terry, Steeple and other fine clocks.
Mason and Sullivan Co.
Dept. WB, Osterville, Mass.

FREE GIFT
For Hard of Hearing
New patented device helps hard of hearing person use telephone. It reduces background noises, helps you hear phone conversations easier. Demonstrates how hearing loss can be overcome in many ways. Yours free if you send for new pamphlet, "7 Steps to Better Hearing". Supply limited.
MAICO Electronics, Rm. 258-X, 21 N. 3 St., Minneapolis, Minn.
Please send free Booklet.
Name _____
Address _____
City _____ State _____

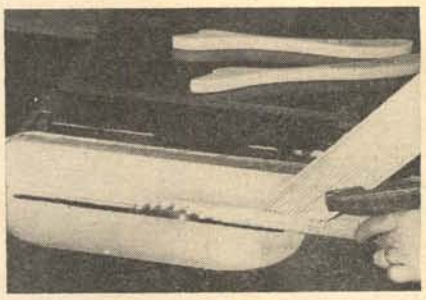
Feather Boards

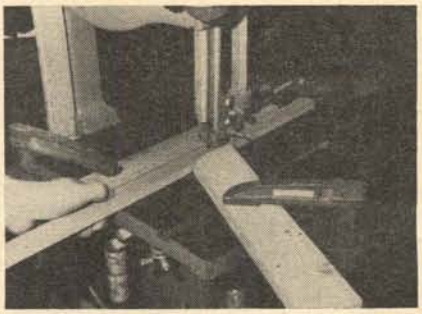
VICTOR W. KONDRA

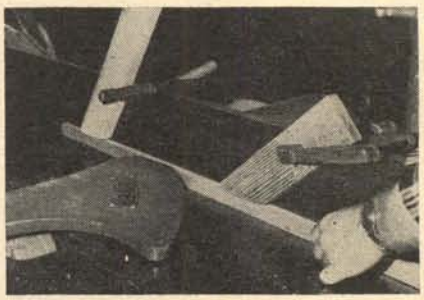


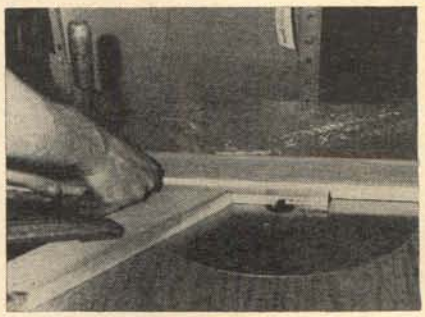
CUT FROM a piece of scrap hardwood stock a feather board costs almost nothing, but can be one of the most useful accessories for power tools that a craftsman can make. Two or three of the boards, one handy at each tool with a second one available when needed, will take care of all the power tools in the average home shop. The feather board will prevent stock from kicking back against the operator of saws, shapers and joiners, and will hold the stock in position so it will be cut or shaped by the tool.

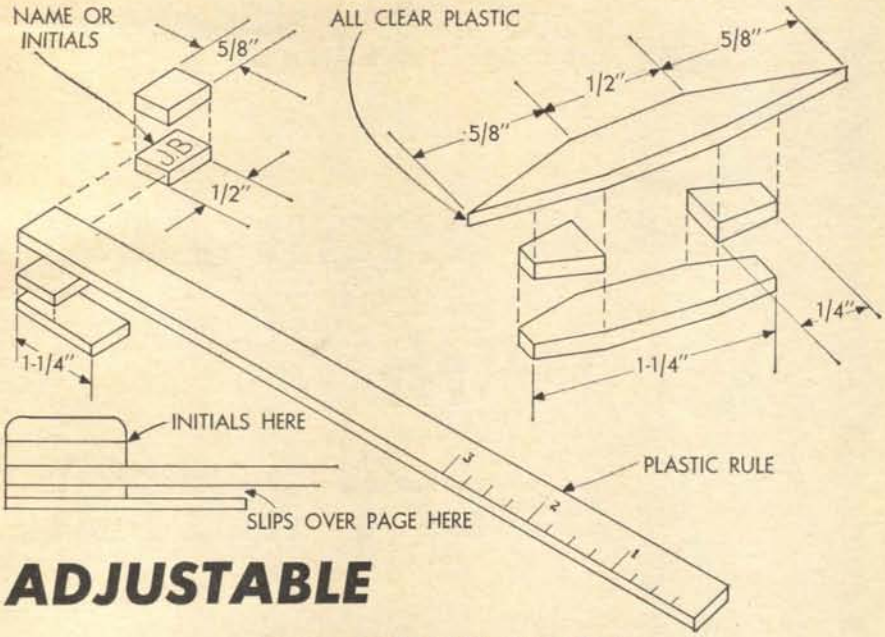
The curve of the feather board can be made with the aid of a French-curve drawing tool, or by simply bending a light wood or metal strip to form a gentle arc. Space the saw cuts about ⅛ in. apart, making them all the same length. The ends of the cuts then will form a curve parallel to the end of the feather board. △ △


On table saw feather board keeps stock from kicking back, holds firmly for dado cuts. Board is clamped to rip fence.


Ripping on bandsaw is safer, more accurate when feather board is used as "fence", being clamped to table.


Two feather boards can be used on jointer-planer to hold long or short pieces of stock, as well as narrow items.


Use of fence and feather board eliminates kick-back of stock when it is run past shaper, or router in shaper table.



ADJUSTABLE BOOKMARK

THIS EASILY-MADE PROJECT is especially useful for students, as they can mark the line or passage of a textbook when they stop after a period of study. Because of its simplicity, the bookmark is a fine project for groups of youngsters. The basis for the item is an 8-in. plastic rule that can be purchased almost anywhere. A few scraps of 1/16-in. clear plastic and some plastic cement are the other materials needed. If desired, plastic paints can be used to accent the points of the sliding part of the marker. Ordinary nail polish also can be used. The rule used for the original, designed by Jack Crockett, Nuevo, Calif., was ½-in. wide; if the rules used are wider or narrower, dimensions of the various parts will have to be changed to accommodate the size difference. △ △

Town of 150 Population Supports

Profitable Saw Sharpening Business

Dick and Jo Ann Koester sharpening hand and circular saws with their two Foley Saw Filers

They started in spare time with one

FOLEY SAW FILER

The Koesters started sharpening saws in spare time with a Foley Saw Filer, Retoother and Setter. Here's the story in their own words, 10 months later: "We have acquired another Foley Saw Filer and for the past two months we have been in full-time operation. As we live in a small town of 150 population in farm area we use our truck to pick up saws in five nearby towns. With a family to support and plans for building to our house we had to pick up business fast and already sharpen an average of 15-20 saws a day. Business for the future looks even better as good machine filing is our best advertising."

Dick and Jo Ann Koester, Koester's Korner

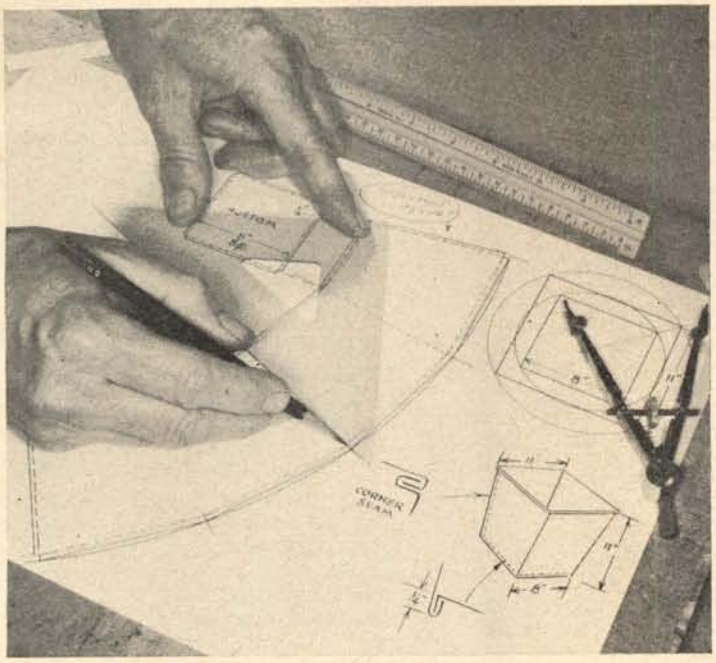
FREE BOOK "MONEY MAKING FACTS" shows just how you can start at home in spare time and sharpen hand, band and circular saws with the Foley Saw Filer. Small investment—time payments if desired. Get this booklet—study it! Send coupon today No salesman will call on you.

FOLEY MFG. CO. 140-2 Foley Bldg. Minneapolis 18, Minn.

Send free book "Money Making Facts" and Time Payment Plan

Name_____

Address_____



1. Rough sketches, scale drawings or full-size templates are made first, taking into consideration allowances for hems and seams in metal.

Working With SHEET METAL

E. R. Haan

Part I

CAREFUL PLANNING AND ACCURATE layout are essential for good results when making items of sheet metal. Often an entire article consists of only one piece which is bent at the corners and hemmed or seamed at the edges. Omission of a single detail, such as the correct allowance for a seam, can spoil a job, and waste considerable material.

After determining the shape and size of an object that you want to make, sketch or draw the parts and their relationship as they look when laid on a flat surface, Fig. 1. The drip-pan layout in Fig. 2, and the box layout in Fig. 3 are examples showing how bottom, sides, ends and allowances for seams and hems are all connected together in what is called a "stretchout".

Small freehand sketches with dimensions often are sufficient for simple objects such as the drip pan in Fig. 2. For more involved projects the drawings should be done to scale or can be full-size. After checking a layout for possible errors you transfer it full-size to the surface of the metal. Sometimes full-size paper patterns are made and traced on the metal.

MARKING THE METAL

Unless the surface of galvanized sheet steel is oxidized a little, it hardly can be marked with a pencil. Therefore fine lines are scratched on the metal with a sharp scriber. To make them stand out distinctly on shining surfaces, Fig. 4, you first coat the metal with fast-drying "bluing" fluid on the areas to be marked. If you cannot obtain this, rub on India ink or use a felt-tipped marker that dispenses quick-drying ink. Where scribed lines will detract from the appearance of an object, make lines with a finely-pointed, hard pencil on a coat of bluing fluid.

Circles or arcs are scribed with a wing dividers or with trammel points. Solid lines indicate cuts, and lines of dashes indicate bends. A tiny cross indicates the center of a hole, arc or circle. In addition to the tools already mentioned, you need a steel square and protractor.

SQUARE AND RECTANGULAR OBJECTS

The drip pan in Fig. 2 has corners that fold together to make it leakproof. Most square-end rectangular objects are planned with corner seams as shown in Fig. 3. In this box the seams were planned to fit inside for better appearance.

Sometimes allowance for the thickness of the metal is necessary as is also indicated in Fig. 3. This often is disregarded for thin metals. When making covers to fit over containers, the metal thickness must be taken into consideration, as the inside of the cover should be a trifle larger than the outside of the container. Also, some seams require a clearance equal to the metal thickness.

Sheet-metal thicknesses are given in table I. These are nominal thicknesses but each gauge has a tolerance range. With 20-ga. galvanized sheet steel the tolerance is .005 in. above, and the same below, the gauge thickness.

EDGES AND SEAMS

To eliminate sharp edges you can hem them as in details A and B of Fig. 5. A hem is simply an edge folded double, which adds rigidity and also improves appearance. The extra width for a hem is added to a part when making a layout. Heavier metals require wider hems than lighter metals. A wire edge, shown in detail C, gives even more

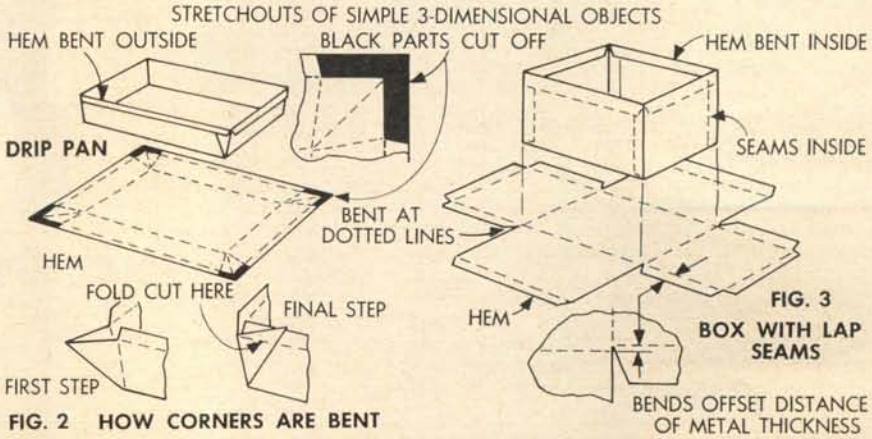
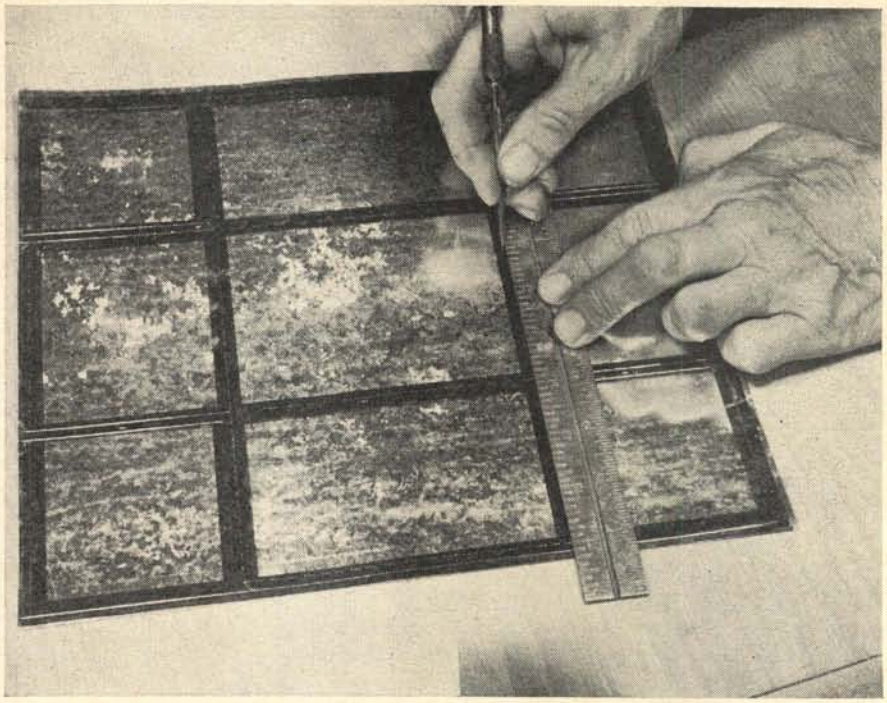


FIG. 2 HOW CORNERS ARE BENT

FIG. 3 BOX WITH LAP SEAMS

4. Scriber is used to mark on sheet metal after "bluing" fluid or ink is applied in layout area to make lines *more readily visible.*



strength than a hem. The allowance for a wire edge on light-gauge sheet metal is 2½ times the diameter of the wire, and slightly more for heavy-gauge sheet metal.

Lap seams, details D, E and F, can be soldered, spot-welded, riveted, fastened with sheet metal screws or machine screws and nuts. A plain lap seam, detail D, leaves a ridge on both sides of the metal, but an offset lap, detail E, produces a flush joint on one side.

The width of a lap seam to be riveted should be no less than four times the rivet diameter, and the distance from the rivet center to the seam edge should be twice the rivet diameter. This seam allowance is made at both edges to be joined. For corner lap seams to be riveted, there should be a clearance of *1/16* in. for the underlying piece as shown in detail H. Rivet sizes for various thicknesses of sheet metal are given in Table II. A simple rule for selecting rivets is that the diameter should be equal to, or exceed, the total thickness of the pieces being joined. The spacing of rivets should be from 3 to 8 times their diameter, according to the strength required.

Interlocking grooved seams, details I and J, are particularly useful for cylindrical objects. They are formed to project either outside or inside the work. Allowance for a grooved seam is three times its width, one half of the allowance being added at each edge.

A corner locking seam, known as the Pittsburgh lock seam, is shown in details K and L. Allowance for the pocket is twice the width or depth of the pocket plus 3/16 in. The flange entering the pocket must be slightly less than the pocket width. Thus, a ¼-in. seam of this kind requires an allowance of 11/16 in. for the pocket edge, 3/16 in. for the flanged edge.

Flat-clip-lock seams, details M and N, are used on square and rectangular work such as ducts, which may have to be dismantled. The clip is a separate piece and can be removed. A dovetail joint in sheet metal, detail O, can be used to join a cylindrical duct section to a flange or flat surface such as a furnace plenum.

CYLINDRICAL CONTAINERS

Fig. 6 shows a cylindrical container having a wired edge, a beaded side, and a double seam joining the bottom to the side. For beading you allow ⅛ in. for a semicircular ¼-in. bead, and 3/16 in. for a ¾-in. ogee bead. The double

FIG. 5 ALLOW EXTRA SPACE FOR EDGES AND SEAMS

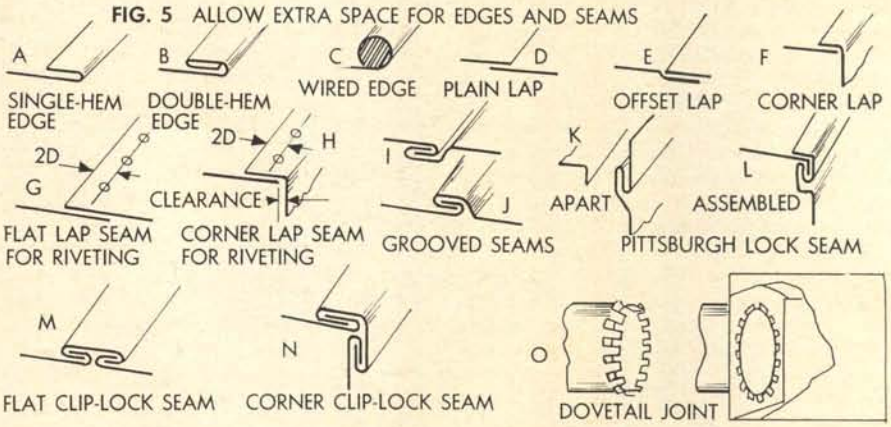
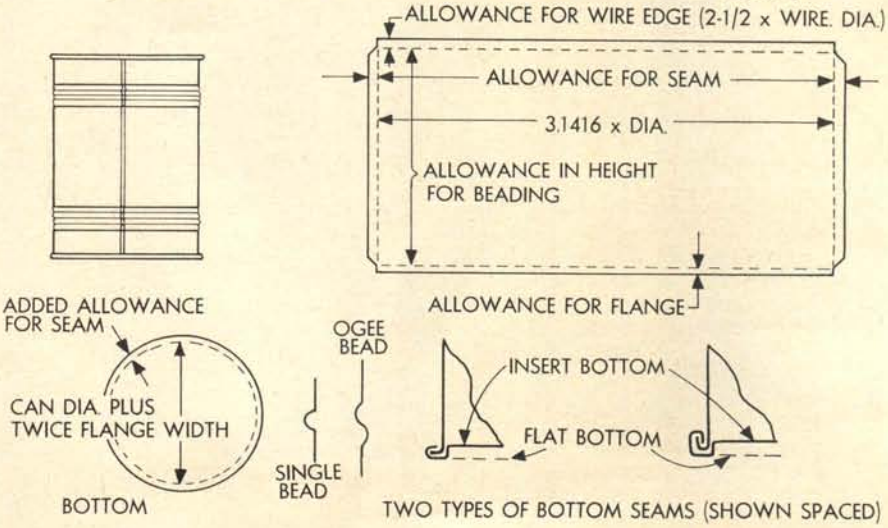


FIG. 6 CYLINDRICAL CONTAINER WITH REINFORCING BEADS



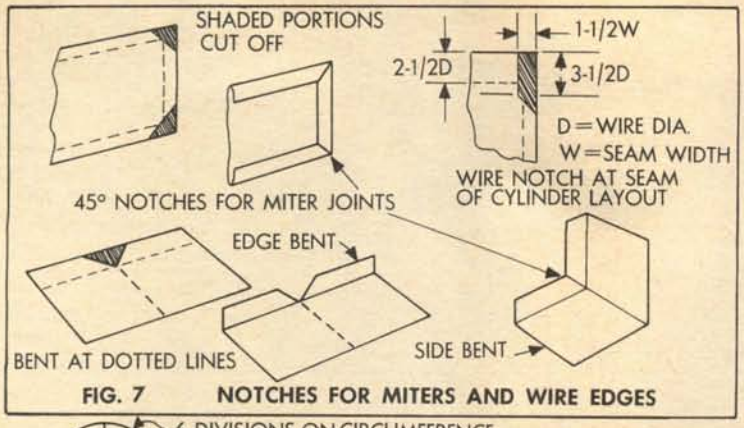


FIG. 7 NOTCHES FOR MITERS AND WIRE EDGES

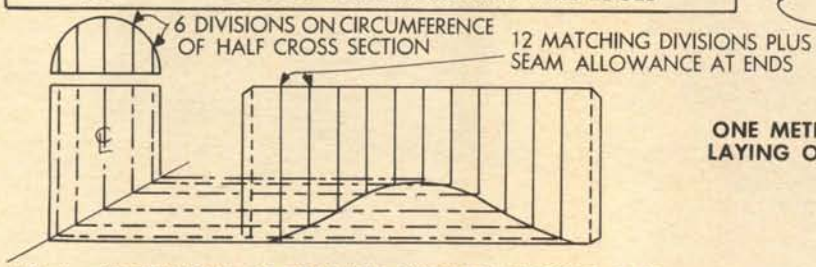
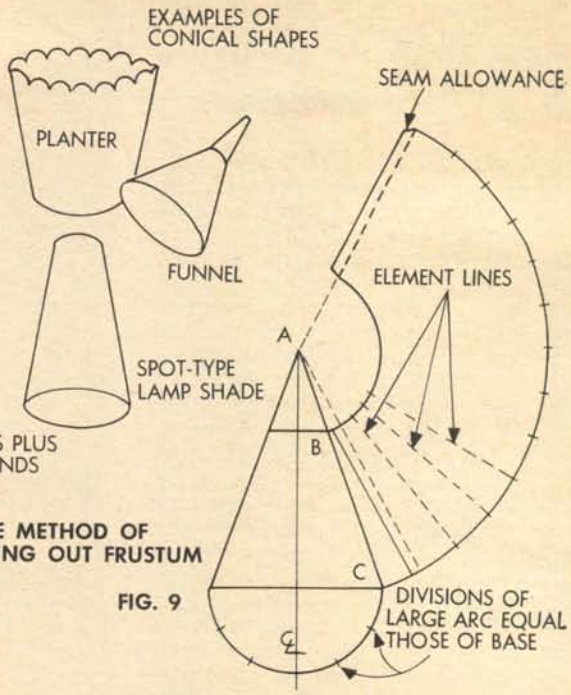


FIG. 8 STRETCHOUT OF CYLINDER WITH 30° SLOPING BASE



ONE METHOD OF LAYING OUT FRUSTUM

FIG. 9

seam at the bottom is basically the same as grooved seams shown in details I and J of Fig. 5, but has one or two extra bends, as determined by a straight or raised bottom on the container.

NOTCHES

Lap seams and hems are notched for clearance at each end as shown in Fig. 3. Where edges of a sheet are to be folded double, as for a nameplate, Fig. 7, the corners are cut off at 45 deg. to form neat miters. When the ends of boxes are bent inwards to form a ledge, 90-deg. V-notches are laid out as shown in Fig. 7. Ends of an edge to be wired are notched where they join a seam as shown in Figs. 6 and 7. For a grooved seam the lower edge of the notch is cut at 45 deg. The width of the notch should be 1½ times the width of the seam.

CYLINDER WITH SLOPING BASE

Where the base of a cylinder is sloping as in Fig. 8, you draw half of the cross section directly above, and in line with, the elevation view. Lay off 6 equal divisions on this semicircle and draw vertical lines from these points to the sloping base line. From these intersecting points run horizontal lines to the stretchout view. Divide the stretchout into 12 equal divisions matching those of the semicircle, and then add allowance for seaming. Points where the stretchout division lines cross the horizontal lines are the basis for drawing a curved line which is the lower edge of the cylinder. Seam or flange allowance is added by a second curved line parallel to, and properly spaced from, the first line.

STRETCHOUTS FOR CONICAL SHAPES

A conical shape or frustum is laid out as follows: Draw half of the base under, and in line with, the elevation view as shown in Fig. 9. Divide the semicircle into 6 equal parts. Continue the sides until they meet at vertex A. From this point scribe arcs having radii AB and AC. Lay off 12 equal divisions on the larger arc that match the base divisions. Extend lines from the first and last points struck off on the larger arc to the vertex A. Other lines drawn from the division points to A are element lines used as guides in bending. Then add seam allowances at the edges to be joined, and at the end to be closed. This method also is used to lay out square and other multisided objects that are tapered, such as the wastebasket in Fig. 1. In such projects the side seams will be least conspicuous when located at the corners.

(To Be Continued)

TABLE I
THICKNESS OF SHEET METALS IN DECIMALS OF AN INCH

Gauge No.	Iron & Steel Sheets (U. S. Ga.)	Steel Wire* (Steel Wire Ga.)	Aluminum, Brass & Copper Sheets & Wire (Am. Wire Ga.)	Sheet Zinc (Zinc. Ga.)
10	.1345	.1350	.1019	.020
12	.1046	.1055	.0808	.028
14	.0749	.0800	.0641	.036
16	.0598	.0625	.0508	.045
18	.0478	.0475	.0403	.055
20	.0359	.0348	.0320	.070
22	.0299	.0286	.0253	.090
24	.0239	.0230	.0201	.125
26	.0179	.0181	.0159	
28	.0149	.0162	.0126	
30	.0120	.0140	.0100	

*Except music wire and drill rod.

Note: For galvanized sheet iron add .0037" to above thicknesses.

TABLE II
DATA ON TINNER'S RIVETS, HOLE SIZES, ETC.

Ga. No. of Metal to be Fastened	Size of Iron Rivets by Weight Per 1,000	Copper Rivet Nos.	Hole Sizes (In.)	Size No. of Rivet Setter Required
32 to 28	10 & 12 oz.	15	.1100	8
26	1 & 1¼ lb.	13 & 14	.1285	7
24	1½ & 1¾ lb.	12	.1405	6
22	2 & 2½ lb.	10 & 11	.1495	5
20 & 18	3 & 3½ lb.	9	.1660	4
16	4 & 5 lb.	8	.1910	3

SMELLY BATHROOM - SMOKEY KITCHEN?

New 5x7 ELECTRIC ALL-PURPOSE HOME VENTILATOR USES new silent type pressure blower. Mounts quickly, easily in 4" deep stud wall space in ceiling, floor or sidewall in new or old houses. For bathrooms, damp basements, hot attics, stuffy halls, exhausts up to 100 CFM! Filters, no draft vents, exhaust pipe extensions, choice of grilles available. SEE YOUR DEALER OR WRITE DIRECT FOR PRICE AND MORE INFORMATION.
GENERAL PRODUCT CO., Dept. VW-2, Kearney, Nebr.

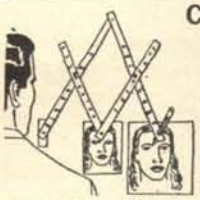
Learn PACKAGING!

Make to 2500% Profits at Home. **WITHOUT SELLING!**

Package products at home for nation-wide sales force. You package bulk items in your own home. **Salesmen DO your selling coast-to-coast.** FREE "No Selling Plan" reveals thousands full, spare time big profit opportunities for beginners in self-service packaging, contract packaging, gift wrapping. We guide you step by step. Everything furnished. **Write today for FREE "10-STEP PACKAGING PROFIT PLAN", and full details. No salesman will call.**
HOME PACKAGING CO., Dept. A-290, 807 Sunset Blvd. Los Angeles 12, Calif.

Metal & Plastic
CANDLE MOLDS

Candle decorating supplies, wicking, dyes, everything you need to make Xmas, party, all season, all occasion candles for fun & profit. Send 25¢ in coin for new catalog of tools & supplies. GENERAL SUPPLIES Dept. GX-327, Fallbrook, Calif.



COPY ANY PICTURE
with the AMAZING PANTOGRAPH

The ideal method of reproducing maps, pictures, diagrams, etc. Just place original design under the tracer point and simply trace it. Makes faithful accurate copies from 25% to 425% larger than original. Comes ready for use with special pencil.
Sent Postpaid, anywhere in U.S. for only $1.00. Order today. No C.O.D.'s accepted.
DAVID W. WOLF 116-12 101st Ave. Jamaica 19, N. Y.

OLD LEG SORES

Are you miserable with pain and aches of leg ulcers, swelling, itching, rash due to venous congestion? Send for FREE BOOK and Full Refund Trial Plan on tested VISCOSE home treatment.
W. N. VISCOSE COMPANY
100 W. Chicago Ave. • Chicago 10, Ill.

Free to WRITERS
seeking a book publisher

Two illustrated brochures reveal how we can publish, promote and sell your books; tips to writers; facts and figures on how we published over 3000 authors. All types of books wanted. Write Dept. WB-1
Exposition Press, 386 Park Ave. S., N. Y. 16

McGUFFEY'S READERS

After a long and costly search, reprints of the original 1879 revised editions of the famous McGuffey's Readers have been completed and you can now purchase exact copies at the following low prices POSTPAID:

1st Reader	$2.50	4th Reader	$3.50
2nd Reader	$2.75	5th Reader	$3.75
3rd Reader	$3.25	6th Reader	$4.25

OLD AUTHORS, Dept. WH-1, Rowan, Iowa

101 PATTERNS • GIFT & NOVELTY • $1

This wonderful packet contains 101 FULL SIZE patterns (up to 23" high) of the smartest Lawn Figures, Bird Houses, Shelves, Action Windmills, Signs, Alphabets, Gifts and Novelties you have ever seen! Just trace and saw out. You also get "Make Money Jig Sawing." All for only $1.00. Send for this GIFT & NOVELTY PACKET today!
MASTERCRAFT PLANS, Dept. J5B
7041 Olcott Avenue Chicago 31, Illinois

CHAIR CANE
SAVE YOUR VALUABLE CHAIRS

Easy to do yourself. Genuine Strand Cane. Woven Cane Webbing for Chairs with Groove. Ash Splints. Flagg Rush. Catalog Dime. Instructions 25c. Complete Seat Weaving Book, $1.15. Raffia, Basket Reed, Basketry Book, 75c.
FOGARTY CANER, Dept. 3, Troy, N. Y.

NO-DUCT Range Hood

PUSH-BUTTONS CONTROL the fan and light in this ductless vent hood. Installation is simple, two screws at each end of the unit hold it permanently in place. Dome-like screen under hood is one of two snap-out filters; it is an aluminum-mesh grease trap. The second filter, not visible, contains activated charcoal that absorbs smoke, fumes and cooking odors. Fan in the hood is small but powerful, drawing 120 cu. ft. of air a minute through the hood, returning it to the kitchen clean and odor free. Fan has lifetime-lubricated motor. The 30-in. model sells for less than forty dollars, can be installed in minutes by any home handyman.

For more information on Nautilus no-duct hood write: Nautilus Industries, Inc., 185 East South St., Freeland, Pa. △ △

CASH FOR YOU- REPAIR BUSTED Electric APPLIANCES

Learn at Home • $3 to $5 an Hour
Spare Time, Full Time • Be Your Own Boss

FREE BOOK tells about profitable business you can run—right at home. Repair Electric Appliances, using simple tools. Pays $3-$5 an hour!
CASH IN ON THIS BIG BOOM 400 MILLION Appliances are in American homes right now. People need them fixed. You make good money doing it. In your basement, garage, even your kitchen.
QUICK WAY TO GET STARTED For less than 20c a day our easy, pictured instruction—backed by 45 years of success in home-training — prepares you for top earnings. Earl Reid of Thompson, Ohio, says: "Made $510 in one month spare time." At no extra charge you get Appliance Tester, too. Finds trouble-spots, checks your work.

Get your FREE Book and FREE Sample Lesson! Mail coupon below, letter or postcard, *now*.

NATIONAL RADIO INSTITUTE, Appliance Div.
Dept. U3A3, Washington 16, D. C.
Send *Free* Book, *Free* Appliance Repair Course Lesson. Am interested in:
☐ Spare Time Earnings ☐ My Own Business ☐ Better Job
Name.....
Address.....
City.....Zone.....State.....
— Accredited Member National Home Study Council —

PAINT YOUR OWN WALL MURAL!

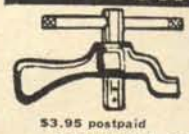
NEW "PAINT-BY-NUMBERS" METHOD! No artistic talent needed. Enjoy the beauty, creative satisfaction of painting a lovely 5 to 14 ft. wide mural directly on your wall! Fun! Easy! Takes only 3 to 5 hours. Artists charge up to $350; wallpaper scenics cost $100 and more. Our complete kits, $12.95 up! Modern provincial, oriental, designs. Send for FREE Color Catalog. "How to" details (enclose 10c for post., hdlg.). MURAL ARTS, Dept. J791, 1038 S. La Brea, Los Angeles 19, California.

MADE $1200 ON ONE JOB

Some make more, some less...
We help you start Your Own All-Year Business

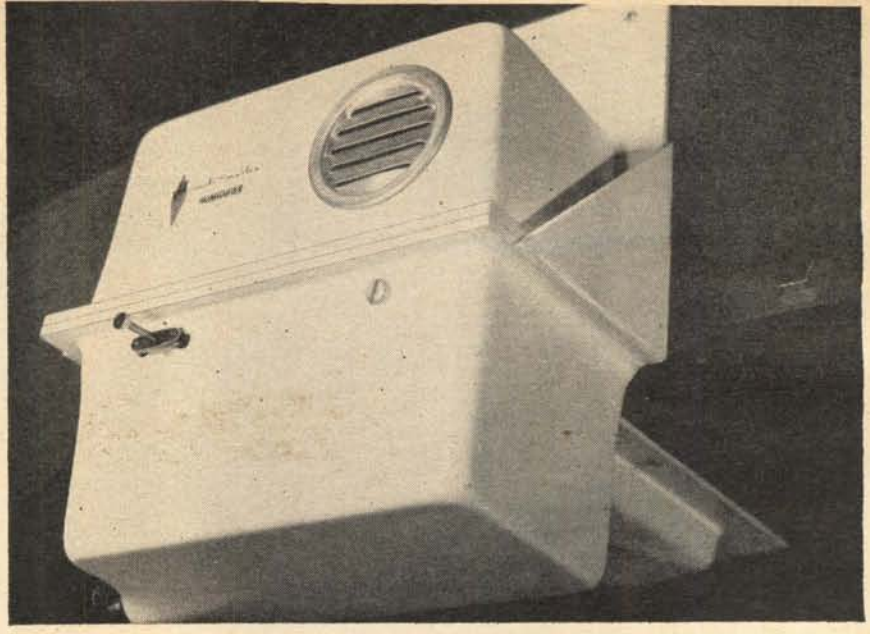
Make BIG Money! G.H. Jones made $1200 on one school job with our highly efficient wall washer which cleans walls 6 times faster and better than by hand. No special skill... small investment...operate from home. Customers everywhere—homes, offices, schools, churches, hotels, etc. Enjoy independence...free from layoffs and bosses. **WRITE TODAY** for **FREE** booklet that tells the whole profit story.
VON SCHRADER MFG. CO. • 152 "W" Pl., Racine, Wis.

NEW! JIFFY-TYE MASTER



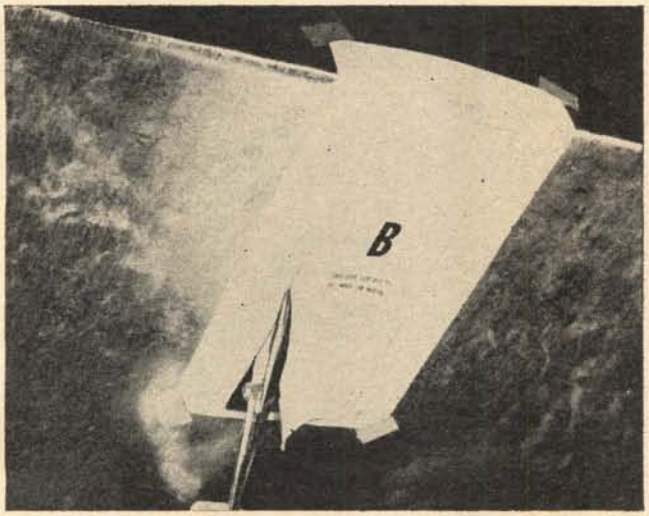
$3.95 postpaid

Wire Tying and Fastening Tool
Clamp hoses factory-tight with a twist of the wrist. Repair fences, farm machinery, equipment, straps boxes. Hundreds other uses. Nothing like it — handles wire up to no. 12. 5-yr. guarantee. Pays for itself first use. Order Now!
CAMPBELL CO. ROCHELLE 49, ILL.

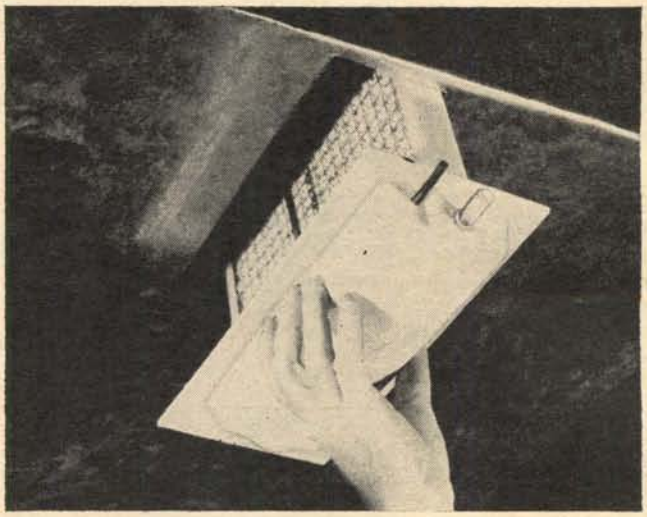


Neat plastic housing of humidifier is rust and corrosion-resistant, light in weight, easily installed.

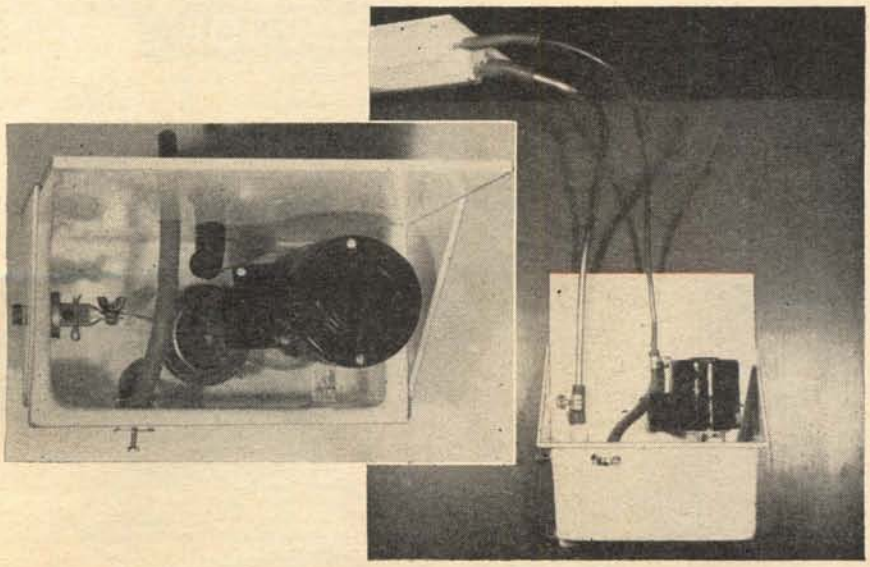
Easily-Installed Humidifier



First step in installation of humidifier is to determine where unit will be located in ductwork. Template then is taped to duct, tin snips used to cut through template to make proper-size opening for unit.



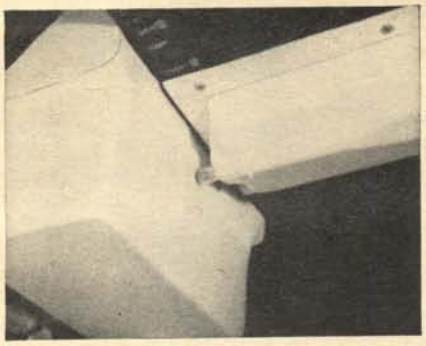
Evaporator unit of humidifier then is fitted into hole cut in ductwork, held in place with six sheet metal screws. Elements of evaporator unit are disposable, should be changed before each heating season.



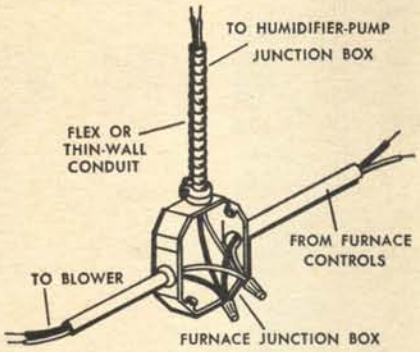
FORCED-AIR HEATING, with no provision for humidification, can be destructive to a home and its furnishings. Hardwood floors will split and the separate strips will shrink, leaving cracks between them. Furniture will come unglued and require repair. Dry air is irritating to humans, drying nasal passages, keeping dust particles suspended. Properly humidified air will seem warmer, permitting temperature in the home to be kept lower. Improved comfort for the inhabitants also means lower fuel bills, as the furnace need not run as often.

A humidifier that is extremely

Water-supply tank, with control devices, can be adjacent to evaporator or located remotely. Small photo shows pump and components inside.

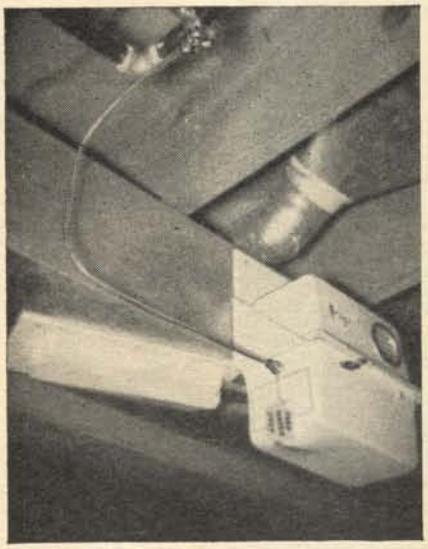


When control unit is located adjacent to evaporator, water lines between two parts of humidifier are quite short.

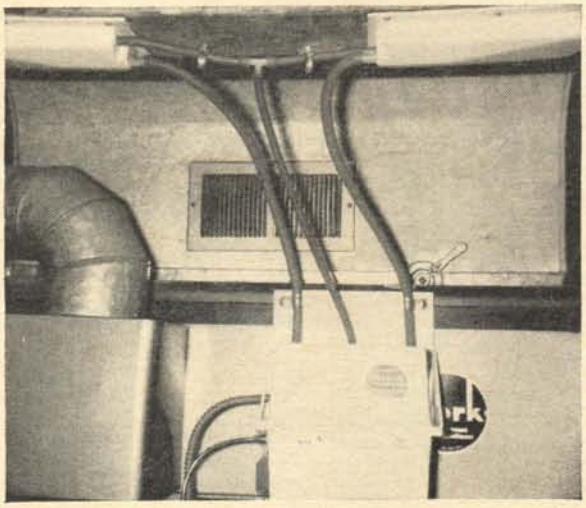


effective, yet can be installed by the average home owner with little time and effort is the Humidi-Master. As indicated in the photos, the evaporator section of the unit fits in a hole cut in the hot-air duct. The tank that controls the water supply is attached to the duct adjacent to the evaporator unit, or can be located away from it. In larger homes, two of the evaporator units are used in the ductwork, but only one water tank and control unit is required. The controls of the unit are wired to the furnace blower, so water is supplied to the evaporator only when the blower is running. No drain line is used, as all the water not used by the evaporator is returned to the supply tank. A float valve in the tank keeps the water level constant; a pump draws only from the tank. Water is delivered to the tank through a copper tube that is connected to the water-supply line by means of a saddle valve. Use of the saddle requires only that a ¼-in. hole be drilled in the water line.

Design of the humidifier is such that no mineral dust evaporated from the water will be deposited on the filter, and there is no leakage of water into the furnace. For more information: Banson Products, Inc., 5718 N. Tracy, Kansas City 18, Mo. △ △



Copper tubing is used to connect humidifier with water supply. Saddle valve is used to eliminate any need for doing pipe fitting.



Pump of humidifier is turned on only when furnace blower goes on; this requires that pump be wired into blower circuit.

Set up an ELECTRICAL APPLIANCE REPAIR shop in YOUR HOME and make good money. No big investment or costly equipment required. All you need is a workbench, spare time and N.T.S. easy Home Training in Electrical Appliance Repair.

Now, you can turn spare hours into cash profit by repairing any home appliances—from toasters, electric irons to washing machines and even room air conditioners—right in your own workshop. Here's your big chance to get into business for yourself on a full-time or part-time basis, doing work you really enjoy. Or take a high-pay job with an appliance manufacturer or large service company.

COSTS LESS THAN $1.50 PER WEEK

N.T.S. will provide you the easy home training you need to handle all appliance repair jobs . . . including a professional Appliance Tester and simple, easy-to-learn instructions, fully illustrated. (See Photo) N.T.S. shop tested training is complete, practical, proved effective. Use your equipment (given to you at no additional cost) to earn while you learn. Pay for your course with spare time profits.

NATIONAL TECHNICAL SCHOOLS
WORLD-WIDE TRAINING SINCE 1905
4000 SO. FIGUEROA ST., LOS ANGELES 37, CALIF., U. S. A.

Accredited Member

FREE BOOK AND ACTUAL LESSON

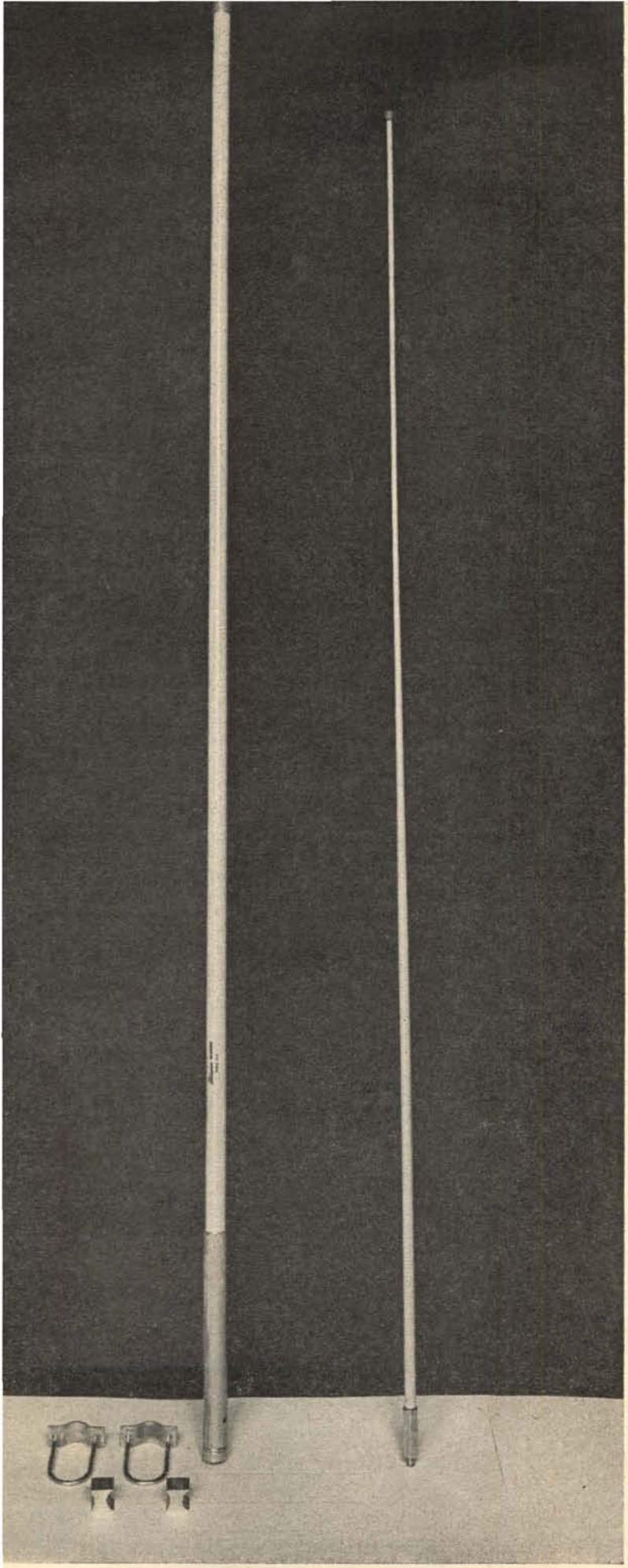
Read about the unlimited opportunities for home appliance men. See how easy, practical and complete your training will be. Mail Coupon, Letter or Postcard now to National Technical Schools, 4000 So. Figueroa, Los Angeles 37, Calif.

NATIONAL TECHNICAL SCHOOLS
WORLD-WIDE TRAINING SINCE 1905

Mail now to
NATIONAL TECHNICAL SCHOOLS, Dept. H7N122
4000 S. Figueroa St., Los Angeles 37, Calif.
Rush FREE "Opportunity" Book and Actual Lesson. No salesman will call on you.

Name _____ Age ____
Address _____
City _____ Zone ____ State _____

NO OBLIGATION—NO SALESMAN WILL CALL



WHAT'S NEW IN CB RADIO

THERE HAVE BEEN some rather amazing advances in the quality of the equipment and accessories available since Citizens Band radio was first given to the public in 1958. Early transceivers had just one or two crystal-controlled transmit and receive channels; you now can purchase units with all 23 channels crystal-controlled for both transmit and receive. Fully transistorized CB transceivers are on the market in cases not much larger than small cigar boxes.

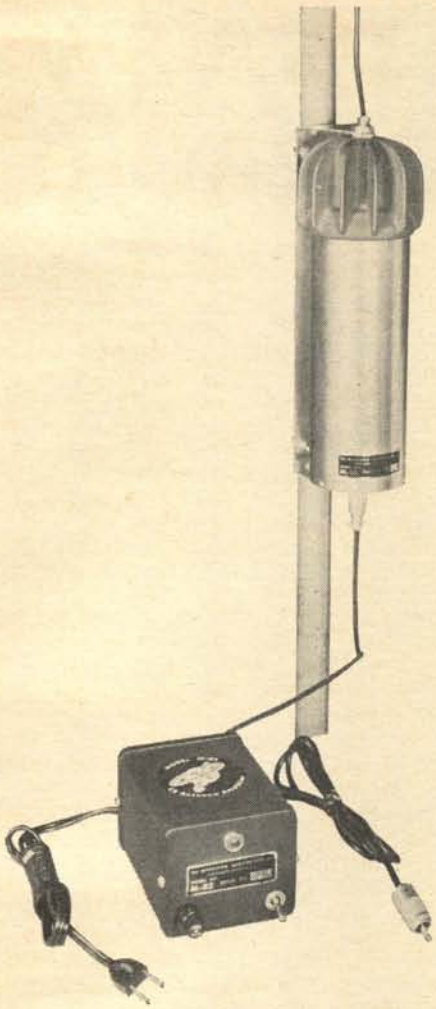
It is in the field of accessories that there has perhaps been the greatest progress. Antenna amplifiers can be obtained to "soup-up" your transceiver. One such device, called the "Black Box," is manufactured by the Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio. The Black Box is an amplifier for both the transmitter and receiver sections of the radio and consists of two units. One component is mounted on the mast and is a low-level radio-frequency amplifier utilizing four tubes. The control box at the transceiver contains a transformer that supplies the mast unit with power through the present coaxial cable, getting its own power from 115-volt house current.

A unit with the same function is the "Rangexpander", made by Tritronic Industries, 10412 Union Ave., Cleveland 5, Ohio. This unit is fitted in one cabinet and is located at the transceiver. Both the Rangexpander and the Black Box were tested by us on several different transceivers. They produced a definite improvement in reception and transmission on older transceivers, and those in the lower price range. When used on late-model, more expensive transceivers, the improvement was negligible.

Very popular in high-density areas is the selective caller or tone squelch. This device keeps your receiver silent under all conditions until one of your own units calls. A tone transmitted by the calling station opens the squelch on your set—also fitted with a caller unit —so you are not bothered by operators on the same channel. Tone-operated squelch systems are built into some of the new CB units and kits are available from the Heath Co., Benton Harbor, Michigan for the conversion of existing units. We are preparing a test report on the Heath Tone Squelch for an early issue. This unit can be used to monitor any of four channels, or all channels can be monitored at once.

The antenna still is the heart of a CB system. One of the antennas we tested recently was the Shakespeare Model 72, made by Columbia Products Co., Columbia, South Carolina. This is a shortened coaxial-type antenna just 126 in. long, as compared to the usual coaxial antenna length of around 204 in. Our tests showed the Model 72 out-performed many of the longer types. It has a fiberglass sheath to protect it against corrosion, and the white color of the sheath is quite attractive. The Shakespeare Model 72 is ideal for marine installations, as it requires no counterpoise.

Lack of grounding in wood and fiberglass boats makes CB installations more difficult than other types. The need for extensive grounding devices is eliminated by use of a "Dynaplate" grounding unit. The Dynaplate is made of porous bronze, this type construction providing a large surface area in comparison to the actual size of the plate. For example, a Dynaplate measuring ½ x 2 x 6 in. provides the equivalent of 12 sq. ft. of copper grounding plate. Dynaplate is manufactured by Aquadynamics, Inc., 6940 Farmdale Ave., North Hollywood, Calif. △ △



MY SPARE TIME HOBBY MAKES ME $5.00 an hour CASH PROFIT

—Grover Squires

START YOUR OWN SPARE TIME BUSINESS

Now you can turn your spare time into Big Cash Profits with your own COMPLETE SHARPENING SHOP... Grind saws, knives, scissors, lawn mower blades... All popular household, garden and shop tools. Your own repeat Cash Business with no inventory—right in your own home—no experience needed—easy to operate—you start making money the day your Sharp-All arrives.

"I received my Sharp-All Monday and put it right to work. The first job came out factory perfect. This is the best investment I ever made."
—J. A. Howell
Taft, California

FREE BOOK tells how you can start your own spare time business while you are still working at your regular job... Easily build into a Big full time Repair Shop.

Low Cost — time payments only $15.00 a month.

Send Coupon Today

BELSAW SHARP-ALL CO, 7503 Field Bldg., Kansas City 11, Mo.

Send Free Book "LIFETIME SECURITY". No obligation.

Name_____

Address_____

City_____ State_____

GRANDFATHER CLOCKS

Build your own
Grandfather and Grandmother
WEIGHT DRIVEN
Chime movements with brass moving moon dials. Also with plain brass dials.
Pre-cut case kits available.
Large selection other movements
Barometers, Hygrometers, Thermometers.
Large Selection Case Plans.
Largest Stock Movements in U. S.
Send 50c for 26 page new 1963 catalog.
Est. 1947

S. A. BYERS
SUCCESSOR TO R. W. HOLWICK
P. O. Box 3175-M **Daly City, Calif.**

Shop Lumber

. . . native and imported

Complete line of lumber and squares.
Order direct from the mill and *Save!*

Send 25c in coins or stamps for complete catalog of lumber and do-it-yourself kits.

GILES & KENDALL CO.

BOX M
HUNTSVILLE, ALABAMA

All materials required for installing dryer vent are included in kit; flexible tubing, vent hood, clamps, wall plate, complete instructions.

FLEXIBLE Dryer Vent

USING SECTIONS of aluminum tubing, with elbows and other fittings, for venting automatic clothes dryers does present problems in routing from the dryer to the outside. Also, the relatively rigid tubing will transmit sound from the dryer. These problems are eliminated with the use of a new type venting system in which the tubing is lightweight and flexible. The material of the tubing is flameproof vinyl-coated fiber glass. Because it is flexible, the tubing can be routed however necessary. If the tubing is cut so that it is slightly longer than necessary, the dryer can be moved without the need for disconnecting the vent system. The pictures show the various steps required for the installation. Any handyman can do the job, full instructions being supplied in the kit that has all the necessary fittings and materials.

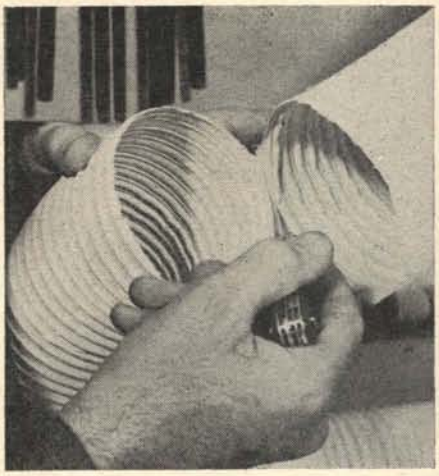
If you do not want to cut through the outside wall of your home, or live in a rented home or apartment where you simply *cannot cut* through the wall, an alternate

First step is to use trim ring to mark hole inside wall, making sure you miss wall stud. Cut hole 1/8 in. outside marked line for clearance.

Drill a hole at bottom of circle to start saw. If hole is drilled through to outside of wall, it serves as marker.

On the outside of wall, use drilled hole as locater, then cut outside hole, making it 1/8 in. oversize, same as inside.

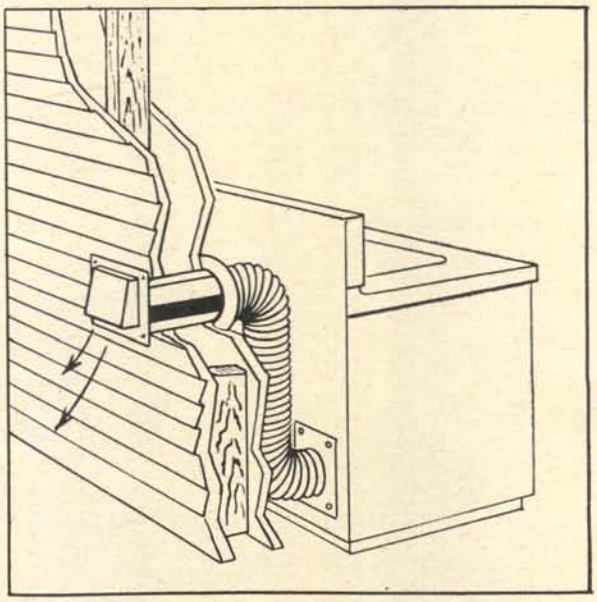
Clean out insulation, wood particles from opening, then insert tailpipe. Fasten hood with wood screws.



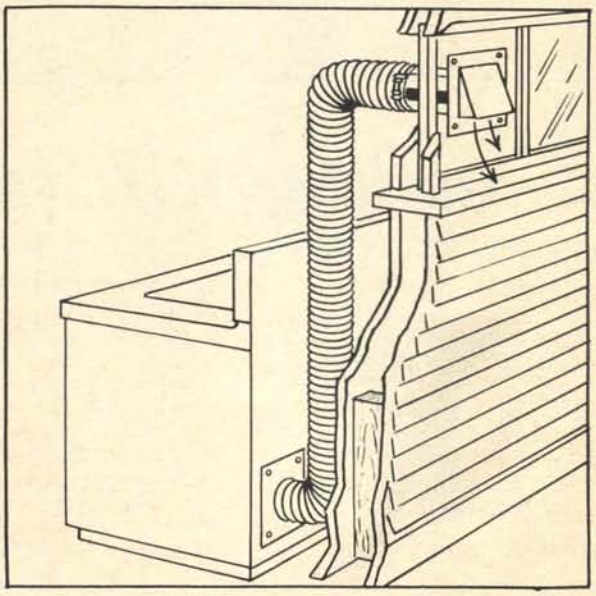
Lightweight flexible tubing is cut with sharp knife and wire cutters. It is cut to length after hood is installed.

Tubing is held on tailpipe of vent hood with clamp that is furnished in the kit. Clamp is tightened with screw driver.

Complete installation is neat and attractive. White tubing goes well with decor of most laundry rooms.



Sketch shows fairly standard method of routing vent for dryer. In basement, routing is similar, vent would be nearer earth.



Alternate method of venting where there is need to avoid cutting through wall is to replace window pane with plywood, insert hood.

method is to use a window for the vent hood. A pane of glass in a basement or laundry-room window is removed and replaced with a piece of hardboard, plywood or clear plastic. A hole is cut in the panel to accept the tailpipe of the vent hood and the installation then is completed in the usual manner. When you move from the apartment, it is simple to remove the panel and replace the glass.

The Flex-Vent kit is available at appliance dealers, or write direct to: Flexible Tubing Corp., Guilford 2, Connecticut for the name of your nearest dealer. △ △

REFINISHING CLINIC

Refinishing Kitchen Cabinets

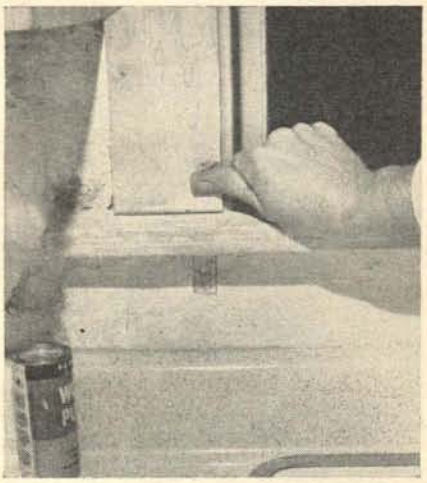
Part II

G. L. BIX

BEFORE ALL YOU SHARP-EYED readers write to tell us that the kitchen shown in this article is not the same one we showed in the last issue, let us explain: After we finished stripping the cabinets in the kitchen shown in the last issue, the owner of the home and the photographer missed signals someplace and we did not get pictures of the refinishing process. However, we were stripping another kitchen at this time, and it is this second kitchen we are using to illustrate the refinishing steps.

When refinishing cabinets or woodwork in a different color, it is important that all nail holes be refilled. Quite likely the holes are filled with white wood putty, or a putty colored to match the original color. In the kitchen shown, nail holes were filled with white putty that showed through the finish as light spots. We removed the old putty by using a nailset to set each nail a little deeper. This shatters the old putty and it easily is cleaned away. If you are using an oil-base stain, mix some of it with the putty to make it the color of what will be the final finish, Fig. 1. To compensate for the lightening of the color by the bulk of the putty, we usually take the settlings from the bottom of the can of stain, which will pro-

1. Putty for filling nail heads that have been reset is mixed with stain to produce color that will match new color.



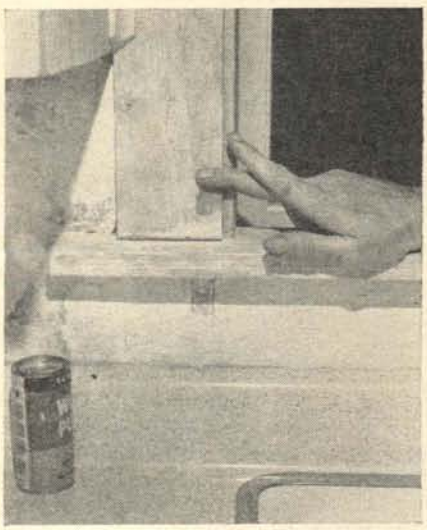
2. Dab of colored putty is forced into nail depression with thumb to completely fill it after old putty is removed.

duce a stronger color. Although we applied the filler to the set nails as in Figs. 2, 3 and 4 before the woodwork was stained, in most cases it is best to first stain the wood. The reason for this being that some types of putty will seal the wood and the stain then will not color the wood properly in the areas around the nail heads.

For the kitchen shown the owner used "Bix-It" wipe on stains. She tested various colors and determined that Nutmeg Maple was closest to the color she wanted. (Nutmeg Maple is a brown color with a slight yellowish cast.) It was decided that the stain be lighter and a bit more yellow. Our solution was to mix about 2 parts of Nutmeg Yellow with 1 part of Toast. The latter color is quite light with a definite yellowish cast. The resulting color was a medium brown with a touch of yellow, an extremely attractive color. The stain was wiped on, Fig. 5, allowed to stand for about 2 minutes, then the excess was wiped off with a cloth, Fig. 6.

When the stain has set, a coat of flat-finish clear varnish is applied. For amateur refinishing it is important that a high-quality varnish be used, one that is self-leveling so that no brush marks are left. This will produce that professional look that is so desirable. Although the non-gloss, clear varnish used for this job dries to a smooth, hand-rubbed appearance, we find that rubbing the dried finish with 4/0 steel wool improves the finish. Two coats of varnish were used, each coat being buffed with steel wool, Fig. 8. To refinish the cabinet doors we hung them on finishing nails, Fig. 9, using the holes in which the pulls are fitted.

Note in the completed kitchen that new plastic laminate was applied to the counter tops, new porcelain knobs were fitted to the doors and wallpaper was applied to the walls. Shutters on the windows are an additional touch. Completely redoing the kitchen along with the cabinets makes a complete job.



3. Finger or putty knife is used to scrape off the excess putty, bring it flush with the surface of the woodwork.

4. Filled nail depressions are neat, small spots of color. Note that new laminate is on counter.

5. Wipe-on stain is used on woodwork and cabinets. Fairly dark color was wanted by home owner.

Live Longer and Better In

NEW MEXICO

THE HEALTHIEST, SUNNIEST CLIMATE

In All America

DO you know people who wake up to sunshine 355 days out of each year . . . people who don't know what it is to be oppressed by humid heat in the summer or by the cold clutch of winter damp? Do you know people who can say that *in their State the rate of cancer and heart disease is only HALF of what the nation as a whole faces?* Do you know people to whom a suntan is a year 'round commonplace, who work and play in a climate called America's healthiest?

We know such people. They live in New Mexico!

There isn't a state in the entire Union that gets the amount of sunshine which is lavished on New Mexico . . . not California, not Florida, nor Arizona nor Hawaii. There isn't a place on earth where the air is purer, where body health is more benignly bestowed.

And in all of New Mexico it would be difficult to match the climate and beauty of the region surrounding bright, charming Deming, located in the sub-tropical southwest portion of the State. Here, in the valley nestled alongside the gorgeous Florida Mountains, is DEMING RANCHETTES, only 5 miles from Deming itself. And here is where you can have a half-acre of your very own for only $199 complete . . . $5 down, $5 per month. In neighboring Las Cruces land such as this is selling for *10* times this price! A year from now may see prices in DEMING RANCHETTES just as high. To show you what we're talking about we want to send you FREE our thick portfolio containing facts, maps, and *actual* 4 color photographs. No obligation . . . no salesman will call. See for yourself. Remember: it's FREE. Simply fill out the coupon.

DEMING RANCHETTES
Dept. N-95A
112 West Pine St., Deming, N. M.

Please send your FREE portfolio in full color including maps and story.

Name_____

Address_____

City_____ Zone____ State____

RUN A BIG-MONEY DINER

I'll show you how to start with little or no capital . . .

Even a small hamburger or roadside stand can pay fabulous profits—if you know the money-making "angles" of the food business. No big investment needed, I show you seven ways to finance your start—and how to make money within an hour after you open for business. Learn at home—even ***start*** at home. My 20 fact-filled lessons—based on my own success—make it easy to get established.

FREE BOOK Send name — no money — for full details. There's no obligation to you whatever. Write TODAY. This is a great business!

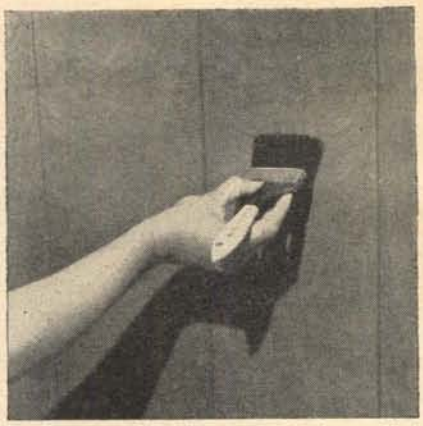
Restaurant Business School
1920 W. Sunnyside Ave., Dept. N-13, Chicago 6, Ill.

Clock Plans & Movements

Build this beautiful grandmother clock from kit which includes plans, 110V movement and dial, only $9.95, Fed. Tax included. Send 10c for 24-page booklet describing other plans, movements, dials and moldings.

CRAFT PRODUCTS, ELMHURST 7, ILL.

6. Because fairly dark color was wanted, stain was allowed to set for about 2 minutes, then wiped away.

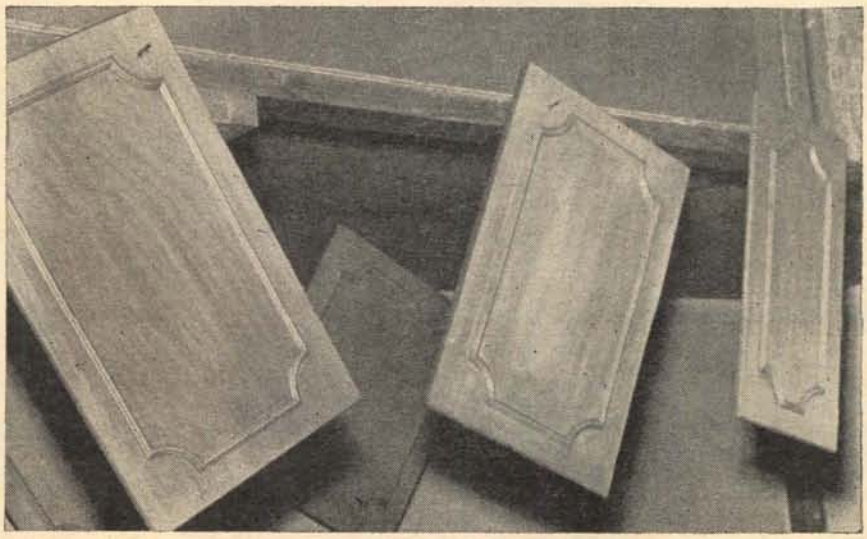


7. Good-quality flat varnish is applied over the stained surfaces. It is important that final finish be top quality.

Q. Recently I refinished an oak table and cut it down for use as a coffee table. The wood seems quite porous and a little on the rough side. I was advised at the paint store to use paste filler on the wood. They told me to pick the color of filler to match the stain I was going to use, but they did not have a filler of that color. Is there a way of coloring paste filler?

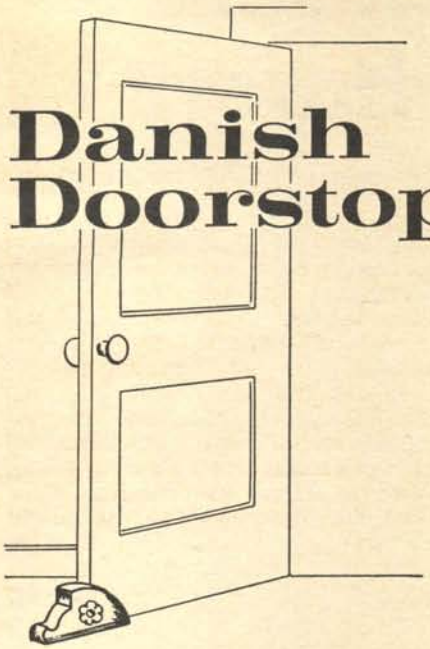
A. I never buy paste filler, other than natural color. All paste fillers have to be thinned—usually one part thinner to two parts of filler—before being used. A filler should be a thick, creamy consistency when applied. I merely take the oil-base stain I am going to use on the furniture and use it in place of the thinner. I apply a liberal coat of the stained filler, let it set for about 5 minutes, then wipe off the excess across the grain. I then wipe very lightly with a soft cloth with the grain to eliminate any streaks. You must be careful not to wipe any of the filler out of the pores of the wood. This procedure produces a very smooth surface on open-grain woods, and enables me to stain and fill in one operation. △ △

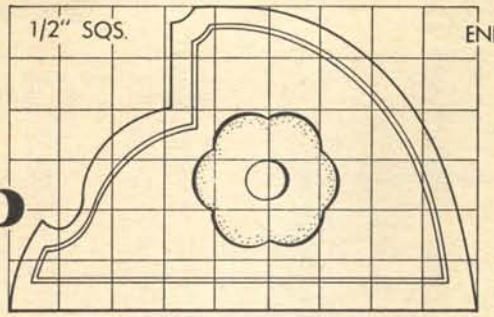
8. Two coats of flat varnish were applied, each coat was lightly buffed with fine steel wool.

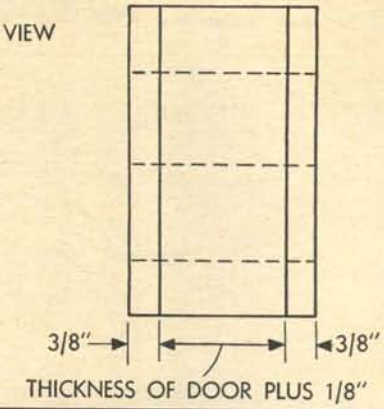


9. For best results in refinishing kitchen cabinets, doors must be removed. To work on them hang them as shown here using holes for pulls.

Danish Doorstop

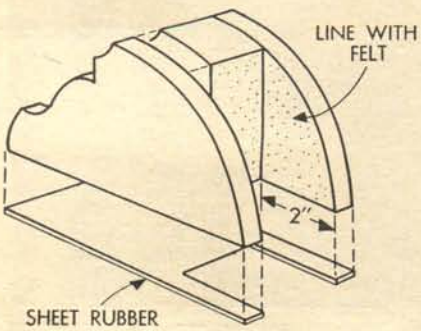






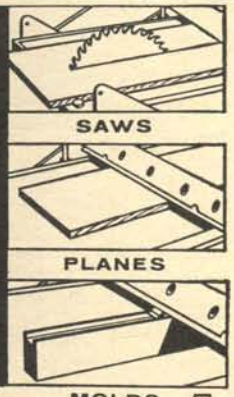
PRACTICAL AND ATTRACTIVE is this doorstop that can be made in an evening, and with hand tools. Ideal as a group project because of its simple construction, the doorstop also requires a minimum of material; scraps from any woodworker's shop will be sufficient. Softwood, in solid stock or plywood can be used, although one of the heavier hardwoods will produce a stop that more easily stays in place.

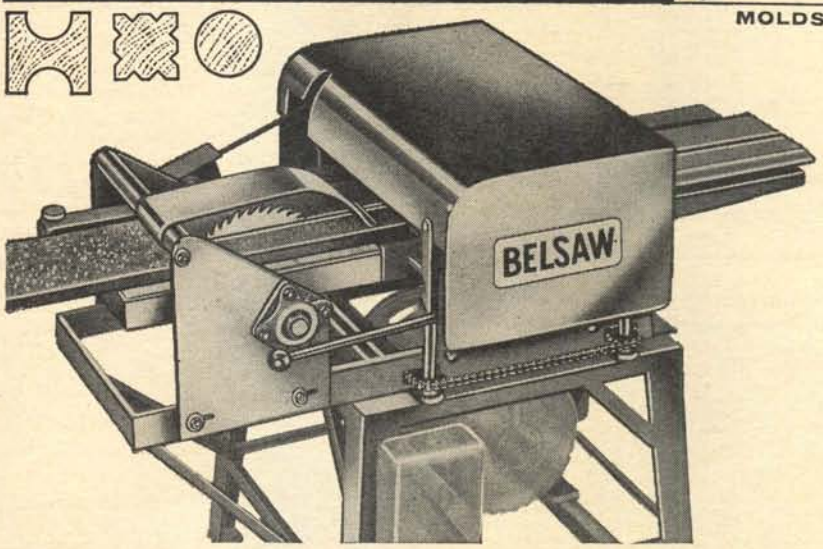
Cut both sides at once with a jig saw, then carve any desired pattern or initial on them before using glue and finishing nails to attach them to the solid block that is cut long enough to provide an opening 2 in. long at the door end of the stop. Line the opening with felt, as indicated, to protect the finish on the door. To keep the doorstop from slipping on a polished hardwood floor, cement sheet rubber to the bottom of the stop. If hardwood is used, apply filler and sealer, then wax. If softwood is used, the doorstop can be enameled.△ △

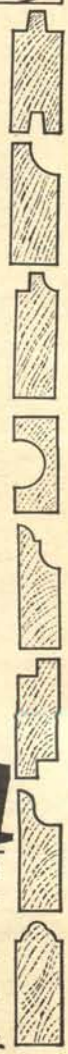


BELSAW

MULTI-DUTY POWER TOOL







Now you can use this ONE **power feed** shop to turn rough lumber into high-value moldings, trim, flooring, furniture . . . ALL popular patterns.

RIP . . . PLANE . . . MOLD . . . separately or all at once by power feed . . . with a one horsepower motor. Use 3 to 5 HP for high speed commercial output.

LOW COST . . . You can own this MONEY MAKING POWER TOOL for only . . . **$30.00** down payment

Send coupon today

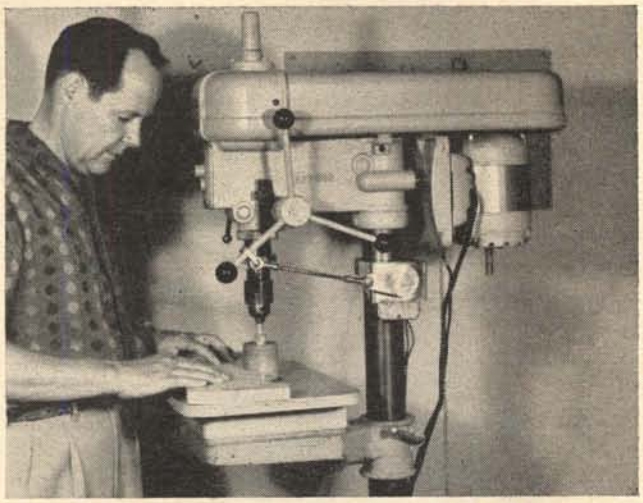
BELSAW POWER TOOLS 963 Field Bldg., Kansas City 11, Missouri
Send me complete facts on the MULTI-DUTY Power Tool. No obligation.

Name _____

Address _____

City _____ State _____

Oscillating Drum-Sander Attachment



1. Oscillating attachment fits on column of drill press, arm connects to arm of quill feed. When not in use, arm of attachment is disconnected from clamp on arm.

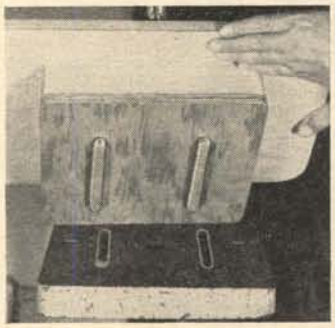
Bruce Burk

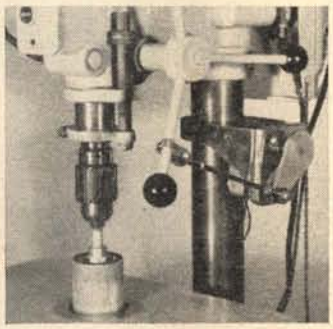
BECAUSE THE DRUM MOVES UP AND DOWN, as well as rotates, an oscillating drum, or spindle, sander Fig. 1, has many advantages over the standard type that simply rotates. It is possible to sand much faster, produce a smoother cut and increase the life of the sandpaper. The problem, up to now, has been that no oscillating drum sander has been available at a price that the average home-shop owner could afford.

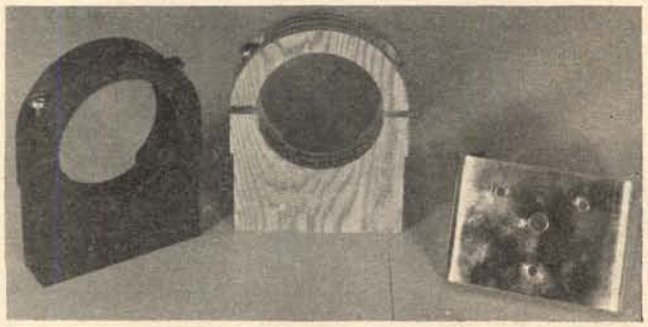
If you own any make of drill press you can have an oscillating drum sander for about $10 (excluding the cost of the drum). The attachment described in this article converts a drill press into an oscillating drum sander in moments, is as readily disconnected. The unit is easy to build, and parts you may not have available, or that are difficult to make, are available in a kit.

Start the project by making the auxiliary table, Fig. 2, and the drawing. The base of the table is the same size as the drill-press table, the top is oversize as indicated, and positioned flush with the back edge of the base. Hardwood strips are attached to the bottom of the base to fit in slots in the drill-press table. If desired, cut an opening in the base for the attachment of a vacuum cleaner. Next, measure on your drill press the distance from the quill-feed handle to the center line of the column, (dimension "X" on drawing). The "L" dimension on the motor-mount drawing is determined by subtracting 2¾ in. from "X". To assure clearance between motor and column, "L" must not be less than 3 in. for a drill press with a 2¾ in. column, 2¾ in. for a 2¼ in. column and 2 9/16 in. for a 1⅞ in. column. If it is not possible to align motor arm with quill-feed handle because of motor interference, alignment can be obtained by rotating motor mount on column. The self-aligning bearings will accommodate considerable misalignment. After determining the above dimensions, make a pencil layout of the motor-mount assembly. The motor-mount block can cut from 1-in. hardboard, Bakelite or similar material. If 1-in. material is not available, glue up the

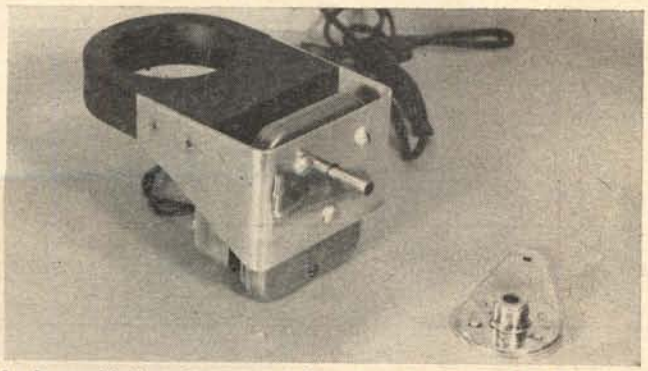
2. Auxiliary table with metal insert is required to permit drum sander to move up and down. Table has oversize top, lower portion is same size as table of drill press.



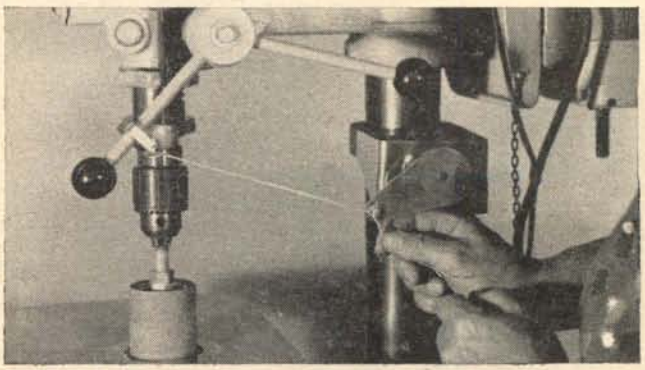




3. Motor-mount block at left is plywood, center unit is Bakelite. Motor-mount bracket at right is drilled, bent to shape, ready for installing.



4. Assembled motor mount has motor attached to bracket, bracket screwed to block. Motor-shaft arm is at right.



5. Quill-feed arm and arm on motor are positioned as indicated, string gauges length of driving arm.

block from ¼-in. hardboard or plywood, Fig. 3. Cut the block to exact width, but leave an inch longer than required. Make a layout on the block, locating the large hole for the press column, the cap-attaching holes and the rabbets for the motor-mounting bracket. Cut and bore to shape. Cut off the cap and true mating surfaces on a sander. Enlarge the holes in the cap to ¼ in., then radius cap and sand smooth. Tap holes in the block, make the notch for motor clearance, as in drawing. Make the motor-mounting bracket, attach motor and fit this assembly to the block, Fig. 4. Make the motor-arm next. Attach hub with rivets or screws, file flat on motor shaft and install arm with set screw. The quill-handle fitting is ⅜-in. aluminum, brass or steel. Size "D" is the diameter of the quill handle. Install the motor-mount assembly on the drill-press column, fit the quill-handle fitting in place, then determine the connecting-rod length, Fig. 5. Vary the length until the motor is rotated smoothly by hand and the desired action obtained. Use the unit with the drill press running at about 1,800 r.p.m. For a kit containing a 30 r.p.m. geared electric motor, 2 self-aligning rod-end bearings and a die-cast hub, send check or money order for $9.85 to J & B Products, P. O. Box 5508, Sherman Oaks, California. Price includes postage in United States. △ △

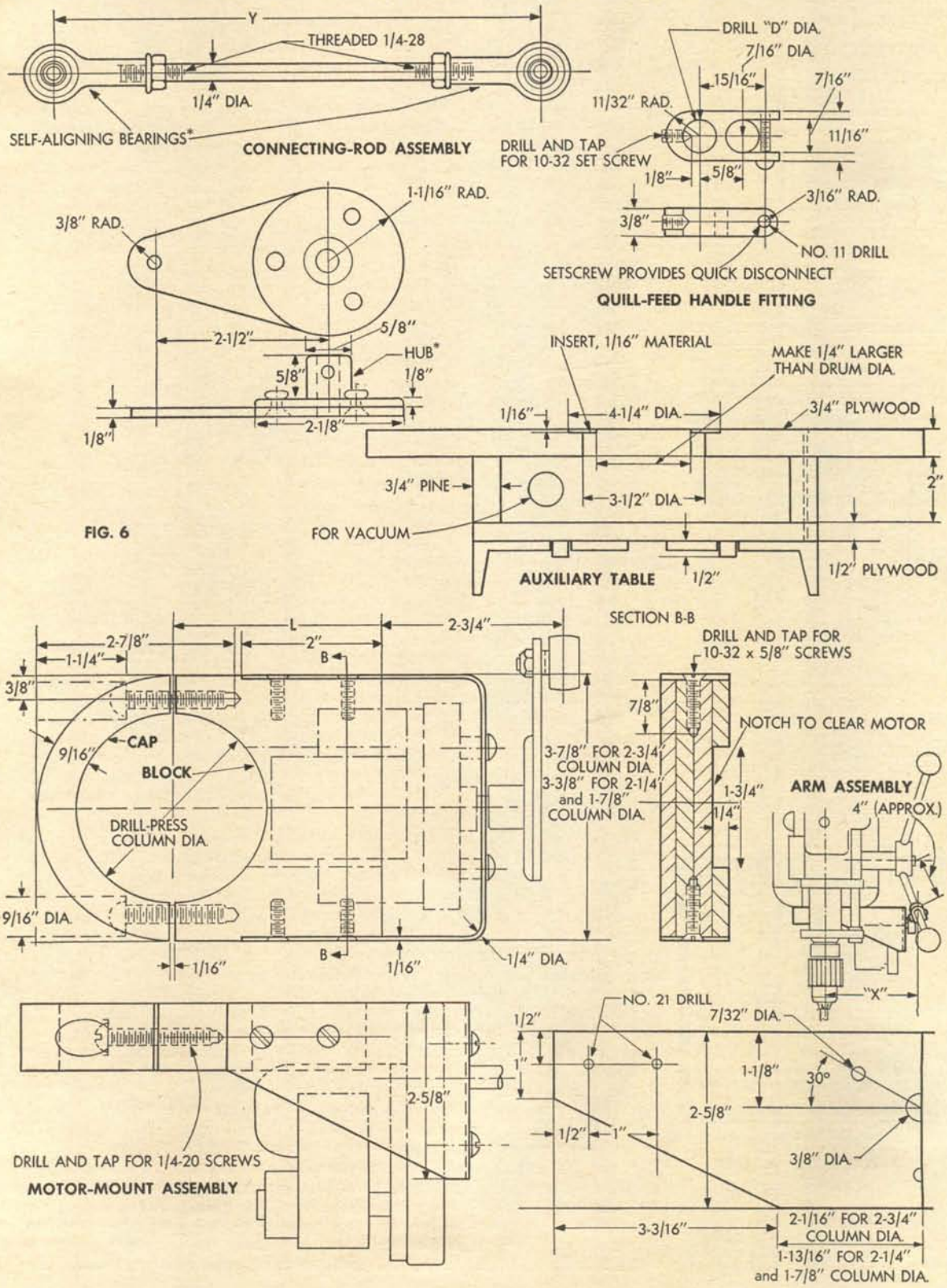


FIG. 6

"THE BEST YOU'LL EVER SEE!"

NEW 3-D MAGNIFIER

$8.95 EACH PPD.

IN LOTS OF 2 OR MORE ($9.95 PPD. IF 1 IS ORDERED)

FREE! Your Name Embossed!

MONEY-BACK GUARANTEE

MAGNA-SIGHTER®

- Magnifies Objects Greatly — in 3-D.
- Leaves Your Hands Free to Work.
- Can Be Worn With or Without Glasses —Even Bifocals.
- Finest Ground and Polished Prismatic Lenses.

Thousands of wood and metal craftsmen and home hobbyists now do close work, see large and clear, work better, faster with less tension, less strain, less fatigue—thanks to the new Binocular Magnifier—Magna-Sighter. Now enjoy close work with both hands free. Order on coupon.

FREE! ANY NAME EMBOSSED ON MAGNA-SIGHTERS ORDERED!

We'll personalize your Magna-Sighter with your name, in sparkling embossed letters inside the Magna-Sighter (see illustration above)—FREE, no extra cost. State names you want embossed on Magna-Sighters ordered. UNCONDITIONALLY GUARANTEED! Try Magna-Sighter 30 days, unless completely delighted, return for immediate full refund.

Fill In and Mail Order Coupon TODAY!

REESE OPTICAL CO.
536 S. Plymouth Ct., Dept. RO-4, Chicago 5, Ill.
(SAVE $1.00 PER MAGNA-SIGHTER. ORDER 2 OR MORE OF ANY SIZE.)

Please rush.....Magna-Sighters postpaid in sizes indicated below, at price of $8.95 each for 2 or more, $9.95 if 1 is ordered. Emboss Magna-Sighters, FREE of extra cost, with names as indicated. This order is protected by your Money-Back Guarantee. I enclose payment in full.

☐ No. 3 (Magnifies 1¾X at 14")
☐ No. 5 (Magnifies 2½X at 10"—most popular size)
☐ No. 7 (Magnifies 2¾X at 8")

Print Name to be Embossed.....
Your Name.....
Address.....
City.....Zone.....State.....

'I'll Give You the Secrets FREE'

HOW YOU CAN CASH IN ON THE EXPLODING PLASTICS INDUSTRY

Space Technology Break-thru has developed new Plastic Materials, Processes and Methods. Now you can Fabricate, Mold, Shape, Laminate and Form new Plastic Materials with hundreds of wanted and needed Glamour Items at HOME! My New, easy-to-learn methods put you in high-profit Plastics Business overnight! Start small—grow big—I'll pave the way for you. Use my money. I'll set you up—help sell your products at good prices, guide you every step of the way and virtually pay you for your Spare Time. Stop wasting Time—get your share of the easy money available now in the BOOMING Plastics Business. HOME PRODUCERS needed desperately everywhere NOW! Send for FREE "No Selling Plan" Booklet and all the complete exciting details of this amazing new Home Business. Learn the hidden secrets of how YOU can cash in quickly on the Exploding Plastics Industry TODAY!

Air Mail for Quick Reply

Mr. William (Bud) Williams, Pres.,
Nationwide Plastics Co., Dept. W-1
Box 23321, Los Angeles 23, California

I want to make money FAST in my spare time. Mail me FREE your "NO SELLING PLAN" Booklet.

Name:..... Age.....
Address:.....
City:..... Zone:..... State:.....

ELECTRIC WELD - BRAZE & CUT

REPAIR MOST EVERYTHING MADE OF METAL

Home appliances, Auto parts, toys, Make & repair lawn chairs, tables, ornamental iron work, etc. Solder, heat, bend with terrific heat from arc torch. Cut and weld up to ¼" steel plate. A million uses for Home, auto, farm, inventors, factories, etc. Works from any 110-V plug-in. Complete with welders mask, arc torch, supply of welding and brazing rods, & complete Welding Instruction Book. Attractive — portable — efficient. 1 year guarantee.

SEND ONLY $3.00 (cash, ck, mo) & pay postman $11.95 plus C.O.D. pstg. on arrival or send $14.95 for Ppd. Delivery. Ideal gift for mechanically minded home owners, relatives, friends. Available only from:

MIDWAY WELDER Dept. DW-2 Kearney, Nebr.

Build Your Own Steeple Clock

Send only $1.00 for complete plans and instructions plus information-packed catalog of movements, dials, case plans and kits for building Grandfather, Grandmother, Terry and other fine clocks.

Mason & Sullivan Co.
Dept. TW Osterville, Mass.

Spinning Wheel

(Continued from Page 23)

turned work. The spokes of the old wheel being copied show not a single score made by sandpapering. The finish cuts were run with a skew chisel. It is permissible to sand the spokes, just be careful to sand out the scratches made by the coarser grade of paper used first. Once the spokes have been turned, dry-fit them in the hub and check for fit in the rim. Likely they'll be a trifle over—remember the allowance mentioned previously —and that is all to the good. You proceed to fit them, first making an identifying mark on a spoke and a corresponding mark on the rim so you can return the spokes to the same position after each trial fitting. In fitting, cut-and-try by filing a trifle off the end of each spoke until by trial you get the length down so that the entire spoke web slips into the rim in a light force-fit.

In the wheel assembly of the original, glue was used only in rim joints. Spokes-to-hub and spokes-to-rim were dry-fitted; no glue was used. The spoke tenons were turned to a light drive fit in the holes in the hub and the outer ends of the spokes were bradded in place, the brad passing through the rim as in the detail, Fig. 2.

In present-day homes the wheel will be subjected to low-humidity conditions not present at the time the original was built and used, so it's a good idea to glue the spokes into the hub. It is, of course, not practical to attempt to glue the spokes to the rim as the glue would be forced out of the joint in the fitting. Drill undersized holes for the brads holding the spoke ends in the rim. Drill through the rim and into the spoke ends and seat the brads with a nailset. Fill the holes with a matching filler.

Now, the spindle-and-crank assembly, Fig. 3. The original spindle was 5/16 in. in diameter and 6 in. long. Use a piece of drill rod, saw and file the crank to approximately the dimensions and curvature given and braze to the spindle. A hinge pin serves as a crank pin and it duplicates the original very closely. Don't fit the spindle in the hub yet, but lay it aside for the moment.

Now, some points that haven't been mentioned so far: In all the turned work on the wheel and on the turned parts that are to follow the importance of sharp tools cannot be over-emphasized. When making the cut on the rim, the tools must be razor-sharp and kept so, otherwise you will have trouble. Clean turning at the slow speeds required when working the wheel rim simply cannot be done with dull tools. Oak is rather difficult to turn even at moderately high speeds and at the slower speeds it requires extra-special care. So, take time to keep those turning tools sharp.

When turning the rim — *making* either the edge cut or the facing cut—be sure to have the tool rest set on the horizontal center line of the work. A little above or a little below center and you very likely will have difficulty preventing the tool from being drawn sideways, sometimes with disastrous results. Shim up the base of the tool rest if necessary to get the correct height and stand on the base to steady it while turning. Of course, you can devise any tool rest you like, but the one detailed will serve the purpose and will not cost much.

Once you have the wheel made there must be something to set it on. Flax wheels usually were mounted on a rather ornate base, which, in the old nomenclature was not referred to as a base but a table, with a three-point, or three-leg, support. The table, Figs. 4 and 5, usually was made from white oak, (as was the original that is being copied), and is dimensioned as in Fig. 4. Some old wheels had bases, (tables), which were wider, some narrower and some tapered slightly front to back. Some were ornamented with a beading as in Fig. 4, the beading run on two sides and across the back end, being stopped across the end as indicated. However, such a beading is difficult to cut without a shaper, so it is entirely optional. The tables of many of the old wheels, (see photo), had no ornamentation at all.

Unless you can locate a piece of solid oak, (quarter-sawed preferred), you will need to glue and dowel two pieces of 2 x 4 stock. Take special pains to get a good, sound joint, one that you are sure will hold. Plane and sand the base smooth and round the corners just slightly. Locate and cut the opening near the back, or top, end. This takes the carrier, which, with other related parts, is known in the old nomenclature as the "mother-of-all". We'll call it the carrier for convenience and refer to the table as the base. Now, the holes for those splayed legs, and the wheel posts, or uprights. And this is going to be a neat trick to bring off! Fig. 5 shows what one is in for. Of course, the old-timers had jigs which were clamped to the base to guide the bit. You can build one if you wish, and certainly if one were to build more than one wheel it would be worthwhile. The front legs splay in two directions, while the back leg inclines in only one direction. The front legs splay even more on many old wheels, the purpose,

of course, being to achieve maximum stability.

Perhaps the simplest way to bore the holes is to clamp the base upside down for the leg holes, right-side up for the wheel uprights, to a table or bench top, set a large T-bevel to the required angles and use the blade as a guide for the bit. If you are careful you can do a very accurate job in this fashion. Main difficulty when boring the holes for the front legs is in getting the bit started at the angle required. It often helps to drill a small pilot hole for the screw center. Be sure the pilot hole is correctly located. Note that the holes for the wheel uprights go all the way through, but that the holes for the front and back legs stop short of breaking through, Fig. 5. Take special pains with the holes for the wheel uprights, as the distance between them determines the fit of the wheel hub. Generally, some work with a file or rasp will be necessary to permit the wheel hub to clear between the uprights. This sort of thing even appears on old wheels, so a bit of file or rasp-fitting here and there is not necessarily a mark against one's craftsmanship.

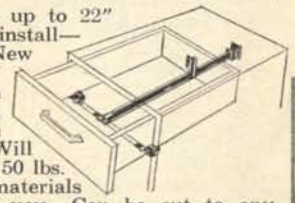
Turning the legs, Fig. 5, is a simple between-centers lathe job. Note that in the details of the front leg the dimensions not shown are the same as those given for the back leg. Be careful to caliper the tenons to a moderately tight drive fit in the holes in the base. No glue is used in these joints in the original. On some wheels the wheel-post tenons are cross-pinned below the base. No hole for a pin is shown as the original was not pinned. Note that the top end of the wheel post is slotted to form a bearing for the wheel spindle. The dotted line indicates a hole for a transverse retaining pin. An ordinary hinge pin with a ball end is a close approximation of the original pin that had a hand-forged head. No separate sleeve bearings are used in the original, although some old wheels had bearings made from bone, (see photo), ivory or lignum vitae wood. A dusting of dry graphite or a drop of melted beeswax will provide lubrication in the wooden bearings.

One other comment about the detail of these turnings, in fact, all turnings on the wheel assembly: The details, the vase-and-bead combinations, the ball tips and the Vees, are purely ornamentation. They contribute nothing whatever to the purpose and efficiency of the wheel as a spinner. Many old wheels were made without any turned ornamentation whatever, or with a long, sweeping vase form ending in a bulbous conformation on the legs, wheel spokes and other smaller turnings such as the uprights on the flyer stand. (In the old nomenclature the uprights that carry the flyer were referred to as "maidens"). You can take your choice here; follow through with the turnings as detailed, or simplify them to any extent you wish. You won't be wrong either way, so far as reproduction of a spinning wheel is concerned. While you are at it, follow through with the tension screw, Fig. 5, using a screw box to make the threads.

Next issue, Part II will cover the flyer, flyer stand, distaff and treadle, as well as finishing.

To Be Continued

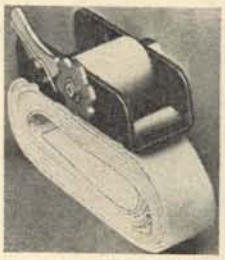
DRAWERS SLIDE EASIER-QUIETER with SINGLE-TRACK DRAWER SLIDE



For drawers up to 22" deep. Easy to install—In Old and New Drawers. 1/8" narrower than opening with 1" between each drawer. Will support up to 50 lbs. High quality materials —low cost to you. Can be cut to any length. Only 98c per set. BARGAIN One Dozen sets only $9.89. Wt. 1 lb. per set. Satisfaction guaranteed. Prices F.O.B. Chicago. **Send 10c for catalog** of lamp parts, veneers, lazy Susan bearings, rocker springs, Swiss musical movements, Wood legs, Folding metal legs, etc.

BARAP SPECIALTIES

VENEERS We have: Veneers 1/28" Thick. To introduce you to our specialized line, we will send Two Square Feet each of Cherry, Mahogany, Walnut, Oak and Maple for only $1.75 ppd. Many other species available, all listed in our Catalog.

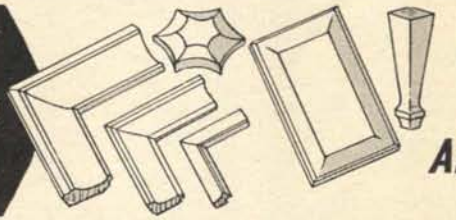


WEB CLAMPS

Indispensible for cabinet work, repairing furniture, etc. Ideal for holding work of any shape and almost any size. Equipped with 12 ft. of heavy 600 lb. break strength nylon webbing. Design prevents marring of work surfaces; eliminates padding. Ratchet action; pressure is obtained by tightening with 9/16" wrench; easy, quick release. Web Clamp — $4.95 ppd.

DEPT. W-12, P.O. BOX 2044
CHICAGO 9, ILLINOIS

MAKE THESE ON YOUR DRILL PRESS



WAGNER SAFE-T-PLANER

ABSOLUTELY SAFE!

U S PAT 2,765,713

IMPOSSIBLE TO GRAB OR KICK BACK!

Save time, save money . . . make picture frames, drawer fronts, panels, tapered legs, rosettes, in hundreds of variations! Use on any ½" capacity drill press, multi-purpose workshop machine or radial-arm saw. Planes parallel with micrometer precision, satin smooth surface, no extra cutters to buy. Complete unit includes planer, 3 lifetime high speed cutters, grinding wheel, arbor, wrench and instructions. Thousands in use! Money back guarantee.

Only $11.75 Postpaid Complete Unit

Write for FREE Detailed Literature

GILMORE PATTERN WORKS • 1164-D No. Utica • Tulsa 10, Okla.

YOU CAN SELL TO THE GOVERNMENT

The U.S. government is buying large and small quantities of thousands of ordinary staple items and products. Most businessmen are not selling to their largest customer, the United States. Regardless of what business you are in, chances are that your equipment and facilities are capable of producing one or more products which can be sold to the government.

ALL ITEMS ARE INCLUDED

Tens of thousands of items are regularly purchased including, not only complex electronic components, but also such products as hammers, paint, canvas tents, glue, photo engravings, lumber, furniture, paper, sheet metal fabrication. The list is endless.

YOUR COMPANY'S SIZE DOESN'T MATTER

Whether you are by yourself, have two employees, or 20, or 200, you have an equal right to bid and win government contracts.

HOW TO START

Order $10 introductory package which includes (1) a current master list of products purchased by the government with specification and classification numbers. (2) A list of procurement offices throughout the U.S. (3) A step-by-step procedure sheet telling you how to go about obtaining government contracts. (4) A government specification brochure giving exact specifications of a typical product which you may be able to produce.

If you are already handling government contracts, write for the cost of a complete set of product and component specifications pertaining to your field.

TO ORDER:

Enclose check for $10, or order C.O.D. if you wish. Satisfaction guaranteed or money refunded.

Air World Publications supplies military-JAN-FEDERAL-QQ specifications and standards books on 24 hour service to over 6000 manufacturing firms throughout the United States.

AIR WORLD
PUBLICATIONS, Dept. 102
Contract Consultant Division
6325 Santa Monica Blvd.
Los Angeles 38, Calif.

MAKE MONEY at HOME FULL OR PART TIME!!

EXPERTLY DUPLICATE Turnings, Carvings, Etc.

right on your own lathe accurately & fast. All from easy to make templets or originals. Now available is our NEW off-the-lathe No. 4 CARVER MODEL, shown here duplicating a valuable mahogany bust from an inexpensive ceramic one! OTHERS ARE MAKING MONEY WITH TURN-O-CARVE TOOLS! So can YOU! FREE literature. Write TO-DAY!

TURN-O-CARVE TOOL, INC., Dept. W-962
P.O. Box 66, Santee, California

130 FULL SIZE JIG SAW PATTERNS UP TO 20" HIGH $1

For an interesting and Profitable Hobby, make and sell Jig Sawed Toys, Novelties, and Ornaments.
To acquaint you with our many Jig Saw Patterns, we will send you **130 OF OUR MOST POPULAR FULL SIZE PATTERNS**, with easy to follow instructions for **ONLY $1.00 POSTPAID.**

S. LYNDS — PATTERNS
71D Park Ave. Natick, Massachusetts

See the HUMIDI-MASTER HUMIDIFIER ARTICLE on page 38

BUY DIRECT . . . SAVE!
INSTALL-IT-YOURSELF
. . . SAVE MORE!

Enjoy Spring-time freshness all winter long with new

Humidi-master HUMIDIFIER

Change winter-heated-desert-dry air to comfortable, beneficial warmth throughout your home—with the humidifier that's *guaranteed* to satisfy you . . . Humidi-Master. Now available direct from manufacturer . . . and you can install it yourself, quickly, easily. Send coupon now for complete information. No obligation.

BANSON PRODUCTS, INC.
5718 N. Tracy, Kansas City 18, Mo.
Rush complete information on Humidi-Master Humidifier

Name_____
Address_____
City_____ State_____

DONKEY FLOWER CART
LARGE TOOL HOUSE • MARTIN HOUSE

Plans and patterns for making THE POPULAR DONKEY FLOWER CART, SWISS CHALET MARTIN HOUSE and 4x7x8 ft. TOOL HOUSE. All three easily made projects, complete with directions. Only $1.00.

MASTERCRAFT PLANS, Dept. J21B
7041 Olcott Ave., Chicago 31, Illinois

Authors!

Your book can be published, promoted, distributed by successful, reliable company. Fiction, non-fiction, poetry, scholarly, religious and even controversial manuscripts welcomed. Free Editorial Report. For Free Booklet write Vantage Press, Dept. HB, 120 W. 31 St., New York 1.

WORKBENCH

Research Department

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide appeal will be answered here. Questions on specialized subjects will be answered by individual letter from the Research Editor's Desk.

Have heard that diffraction grating, normally used for scientific purposes, now is available for use in decorating items. Is this true, and where can the material be obobtained?
C.J.S., Chicago.

The material is called diffraction-grating replica, and is made of flexible clear plastic. The rainbow hues produced by hundreds of lines per inch on the material makes it ideal as a decorator medium. It can be obtained from the Edmund Scientific Co., Barrington, N. J. Incidentally, this firm has an excellent catalog of over 1,000 optical and scientific items that is also an excellent reference manual.

Kindly advise if there is a simple way to install a pilot light on one of two presently-installed 3-way switches. The purpose of the pilot light is to indicate the garage light is on.

I would like to avoid connecting the two switches with a fourth wire because of the work involved in breaking and patching the walls. Would a separate switch and separate pilot light help?
Mr. J.F.C., New Jersey

You should discard the present 3-way switches and purchase and install special 3-way switches that have red warning lights in them. These are nominal in cost and offer a much simpler solution than attempting to wire warning lights into the present circuit.

The outside walls of my two-family home are about 10 in. thick, with stucco applied directly to the outside of terra cotta tiles, and plaster applied directly to the inside. The rear of the house faces a north-easterly direction and this section of wall that is about 30 ft. long and over 20 ft. high receives the full impact of the sun from about 11 AM until sundown. In the summer this causes the rooms on that side of the building to be uncomfortably warm, and in the winter the rooms are too cool for comfort. To remedy the situation I am considering putting aluminum siding on that rear wall, spacing the siding out from the stucco. The cost of the job is several hundred dollars and I am wondering if this work would improve the situation enough to warrant the expenditure.
Mr. L.D.C., Brighton, Mass.

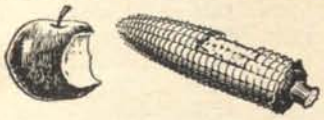
No, the aluminum siding will not correct the condition; in fact, the siding may worsen the situation, if anything. What you need to do is consider the other, or room side, of the wall. You can apply furring strips to the room side, apply a blanket insulating material such as glass wool with a vapor barrier and finish with plasterboard.

We hesitate to recommend this procedure because of the expenditure and labor involved, but it will get the insulation on the room side of the wall where it belongs, and is the only possible, practical way of correcting the situation.

Last year I bought a melodeon made by Simmons and Blakeman of Detroit. I am wondering if you could provide any information on this reed instrument; how old it could be, and so on?
Mrs. F.S., Sierra Madre, Cal.

We are sorry, but we have no information on the melodeon. In general, these instruments were at their peak of popularity many years ago. It is likely yours is an old one, but we would not venture a guess as to how old. We do not appraise the value of, or research the age of, antiques of any kind.

EAT ANYTHING WITH FALSE TEETH



Trouble with loose plates that slip, rock or cause sore gums? Try Brimms Plasti-Liner. One application makes plates fit *snugly without powder, paste* or *cushions.* Brimms Plasti-Liner adheres permanently to your plate; ends the bother of temporary applications. With plates held firmly by Plasti-Liner, ***YOU CAN EAT ANYTHING!*** Simply lay soft strip of Plasti-Liner on troublesome upper or lower. Bite and it molds perfectly. *Easy to use,* tasteless, odorless, harmless to you and your plates. Removable as directed. *Money-back guarantee.* At your drug counter. $1.50 reliner for 1 plate; $2.50 for 2 plates. Plasti-Liner, Inc., Dept. P-57, 1075 Main Street, Buffalo 9, New York.

BRIMMS PLASTI-LINER
THE PERMANENT DENTURE RELINER

EAR NOISES relieved!

. . . thousands reported

Wonderful relief from years of suffering from miserable ear noises and poor hearing caused by catarrhal (excess fluid mucus) conditions of the head. For the past 23 years that's what folks (many past 70) reported after using our simple Elmo Palliative HOME TREATMENT. NOTHING TO WEAR. SOME of the symptoms likely to go with your catarrhal deafness and ear noises; mucus dropping in nose or throat every day; hear — but don't understand words; hear better on clear days — worse on bad days; ear noises like crickets, bells or others.

Write TODAY for PROOF OF RELIEF and 30 DAY TRIAL OFFER. Pay only if helped.
THE ELMO CO., Dept. 3WH2, MADRID, IOWA

STOP SUFFERING AND START LIVING!

WEB GUARANTEES IMMEDIATE, LASTING

RUPTURE RELIEF

OR YOUR MONEY BACK IN FULL!

Enjoy a stronger, happier life. Wear a Web for strong support and lasting relief of reducible inguinal rupture. If not completely satisfied, return within 30 days for full refund of purchase price.

Write for FREE book on rupture care.
WEB TRUSS CO. Dept. WB-1 Hagerstown, Md.

LEG SUFFERERS

Why continue to suffer without attempting to do something? Write today for New Booklet—"THE LIEPE METHODS FOR HOME USE." It tells about Varicose Ulcers and Open Leg Sores. Liepe Methods used *while you walk.* More than 60 years of success. Praised and endorsed by multitudes.

FREE BOOKLET

LIEPE METHODS, 3250 N. Green Bay Ave., Dept. A-27 Milwaukee 12, Wisconsin

FREE GUIDE *Reveals 200 Ways to Make Extra Money*

YOU can turn your spare hours into cash ($25 to $100 a week) by selling products and services to friends and others. Famous *Salesman's Opportunity Magazine* shows you how. Contains hints, plans, hundreds of offers. No matter what your age, experience or occupation — write TODAY for next 5 issues—absolutely FREE. Send no money just name.
OPPORTUNITY, 850 N. Dearborn, Dept. 645. Chicago 10, Ill.

CASTING SECRETS REVEALED!

Learn how to make big money casting plaques, bookends, figurines, etc., with X.L. rubber molds.

NO EXPERIENCE NEEDED

X.L., Rubber, Pts. $2.50; Qts. $4 (postage extra). Molds and enough rubber for 3 molds, $1.50 prepaid. U. S. only. Send 25c (refunded with order) for 40-page catalog describing this profit-making business!

PLASTIC ARTS STUDIO 3403 S. MADISON, DEPT. 3 MUNCIE, INDIANA

I have a platform rocker that is causing me trouble, and I have not been able to correct the difficulty. I have leveled the platform and glued all joints, but when anyone rocks in the chair it creeps sideways in a counterclockwise direction. The springs seem quite strong, but this movement pulls one spring forward and the other one back. If the chair is rocked long enough, it runs clear off the platform.
Mr. H.H.H., Mt. Pleasant, Iowa.

The rockers are not in line, and this causes the chair to creep. How you correct this fault we cannot say, as you did not tell us what type platform rocker you have. However, it should be a comparatively easy job to align the rockers so they are parallel.

We have a two-story building with an apartment on each floor. In the winter the upstairs windows frost over so badly you cannot see out of them. These windows have aluminum, self-storing storm sash. There also is insulated siding on the house. Our downstairs windows do not steam up, have wooden storm sash that have small vents in them. Would venting the upstairs sash help eliminate the frost problem?
Mr. and Mrs. C.K., Lansing, Mich.

The siding has nothing to do directly with the formation of condensate on the upstairs sashes. The moisture causing the trouble comes from inside the house, not the outside. Of course, the moisture rises, along with the warmed air from the first floor, and for this reason there is a greater concentration of water vapor in the upstairs rooms.

No doubt the metal storm sashes are leaking air into the space between the inner and outer sashes. They usually do after a time. Depending on what type they are, it may be possible to obtain and fit new gaskets. This should at least minimize the trouble, if not cure it. entirely.

Powerful 6 h.p. riding mower saves time and work!

You'll use ARIENS EMPEROR for many year 'round Gard-N-Yard jobs — mows, aerates, rakes, rolls, fertilizes lawns . . . hauls carts . . . plows snow. Choice 32" and 26" rotary or 30" reel mowers. Has rear-mounted 6 h.p. engine for extra traction, stability . . . 4 speeds forward; reverse — fingertip controls. Built for long service — priced to save money!

For free Emperor literature send name and address to
ARIENS COMPANY
279 Calumet St., Brillion, Wis.

ARIENS GARD-N-YARD

IT CLEANS!

FOR PLASTIC VINYL METAL CERAMIC TILE STATIC FREE!

If not available at your dealer, write Direct for FREE samples plus literature on other Quickee Specialized cleaners. Quickee Products, Inc., Yonkers, N. Y. Dept. W

TOOLS WHOLESALE

$1.00 PUTS YOU IN BUSINESS

Start your own business, sell tools to your friends and neighbors, or buy tools for your own use and **SAVE MONEY $$$**

A MILLION DOLLAR INVENTORY AT YOUR FINGERTIPS. NO STOCK TO CARRY. ORDER AS YOU NEED IT. Send $1. for Tool Catalog today.

BUY AT WHOLESALE PRICES. Extra $25.00 profit on your accumulated purchases. $1.00 refund on first purchase or refunded if you're not 100% satisfied with our offer.

THOUSANDS! ! of Nationally Advertised items of Hand Tools, Power Tools, Machinist Tools, Tool Chests, Paint Sprayers, Light Fixtures, Appliances, Guns, Gifts, Toys and other items too numerous to mention.

WE SHIP COAST TO COAST
Wholesale Discounts up to 50% OFF

SILVO HARDWARE CO.
Dept. WB-1, 107 Walnut St., Phila. 6, Pa.

FREE Key Machine

Kind master locksmiths use. Sells for $125, but yours FREE with Locksmithing Course

You Can Learn To Be A
LOCKSMITH
in your spare time

There's a big demand for skilled locksmiths. You can earn big money either full or part-time in your own home. Be your own boss; earn steady, year 'round income with no layoffs. The BELSAW INSTITUTE training, recommended by professional locksmiths, teaches you to make keys, open and repair locks on homes, cars and buildings. Easy, step-by-step illustrated lessons complete with all tools and supplies. We tell you how to get servicing jobs, how much to charge, how to earn while you learn and how to build a secure cash profit business.

Mail Coupon for FREE Book Today!

BELSAW INSTITUTE, 173 Field Bldg., Kansas City, Mo.
Send FREE book, "Keys To Your Future!"
No obligation. No salesman.

Name.....
Address.....
City.....State.....

"Jorgensen" and "Pony" **CLAMPS**

hold your work

These and many other designs described in literature sent FREE upon request. For big, 32-page "HOW-TO-CLAMP-IT" catalog, send 25c.

the clamp folks | **ADJUSTABLE CLAMP CO.**
415 N. Ashland • Chicago 22, Ill.

People 50 to 80 Tear Out This Ad

. . . and mail it today to find out how you can still apply for a $1,000 life insurance policy. Once your application is approved, the policy can be carried the rest of your life.

Handle entirely by mail with OLD AMERICAN, the company that helped pioneer insurance for senior Americans. No one will call!

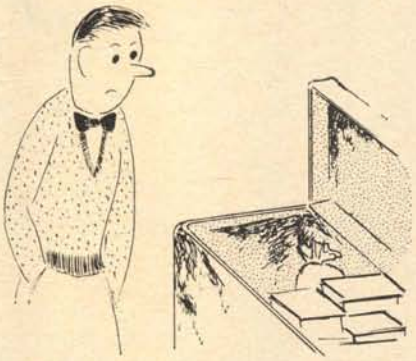
Send name, address and year of birth to Old American, 4900 Oak, Dept. L106M, Kansas City 12, Mo.

101 ASSORTED SMALL SPRINGS $1

Stop wasting hours looking in stores for the hard-to-find small spring you need. Here is an assortment of compression, extension and torsion springs in a range of sizes and a low price that will amaze you. Quality tempered music wire. All packed in a convenient, see-through box that fits handily into tool chest or cabinet. MAIL ORDER TODAY! Satisfaction or money back! $1.00 delivered.

DRUMCLIFF CO.
DEPT. 771, TOWSON, MD.

My freezer has accumulated mildew on the white porcelain. It appears to have stopped since I dried up the basement. Is there any way to remove the mildew, is there some sort of preventative to apply, and is it practical to refinish the porcelain?
Mr. L.A.W., Charlotte, N.C.



We assume you are referring to the inside of the freezer. If this assumption is correct (you did not say, and both the inside and outside of the freezer could be involved) then it is possible to remove the coating from the surface with a mild solution of trisodium phosphate, about a tablespoon to a half-gallon of water. There is no practical preventive, other than a mildew-resistant paint, and this will not bond to porcelain.

Something is wrong with the plaster in my new home. In one room especially, a section of plaster seems to be soft and the surface breaks into fine particles when rubbed with the finger. No decorating has been done by me because of this condition. Will this condition spread to the whole plastered area, and what do I do to correct it?
J.N., Okla.

No, the condition you describe is not at all likely to spread and involve the whole plastered area. We'll guess right away that the weakness of the plaster coat is due to a condition which prevented proper setting at the time of application. Probably the water in the plaster mix either was inadequate, or evaporated too fast at the time it was applied. This usually produces a surface such as you describe. It could be that your contractor would be willing to correct the defect. Or, if not, or if your contractor is no longer available, then you can do the job yourself simply by spraying the defective surface with a fine, mist-like spray of clean water, keeping the surface moist with repeated applications until the plaster sets. This it will do, assuming, of course, that a lack of water in the original mix is the cause of its failure to set properly.

I have a small home, 6 years old, with a low-pitched roof. There are louvers in the gable ends, but during very cold weather I get frost in the attic. When this has melted in past years, and during warm spells in winter, it has caused some discoloration of plaster on ceilings. What can I do about it?
K.M., New York

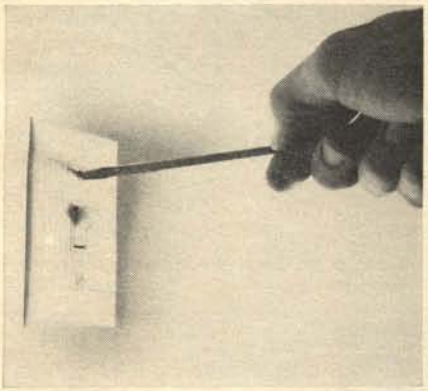
Yours is an annual problem of many home owners in the colder climates, and especially in newer-type homes. Two things can be done to prevent, or at least minimize, the trouble. The first is to install louvers of a size that normally will assure adequate ventilation of the attic space. The rule is —and it has been proven quite accurate for normal conditions—to provide one square foot of free louver area for each 100 square feet of attic floor space. Notice the "free" area. This is the actual ventilation area of the louver and does not include that taken up by the louver slats. The other step is to apply two additional coats of paint to the ceilings in all rooms. Brush out well (if you apply too thick it may peel) and be sure the paint is the same composition as that previously applied. Or, better still, if the ceilings have been painted with an oil-base paint, then apply two coats of varnish-base aluminum paint or paste white lead (tinted to whatever color you like) thinned to a brushing consistency with spar varnish. Any of these will serve as a fairly effective vapor barrier (varnish base paints are the most effective of the two) which will prevent moisture from the rooms from entering the attic.

While in storage, some of our furniture developed a musty smell. The odor is especially noticeable in the drawers. We cannot use the furniture because anything placed in the drawers or cabinets absorbs the odor. What can we do to eliminate the odor? We have tried "fresh-air" sprays, but they just make the odor more objectionable.
Mr. F.B., Manistee, Mich.

If you dampen a cloth with a few drops of white vinegar and scrub the interiors of all drawers and cabinets you should get rid of odors due to mildew, which is a common cause of the musty odor. The other cause is more difficult to deal with. Some finishing materials when exposed to dampness over a long period of time will develop an odor that can be eliminated only by the removal of the old finish to the bare wood, and refinishing. But, try the vinegar first.

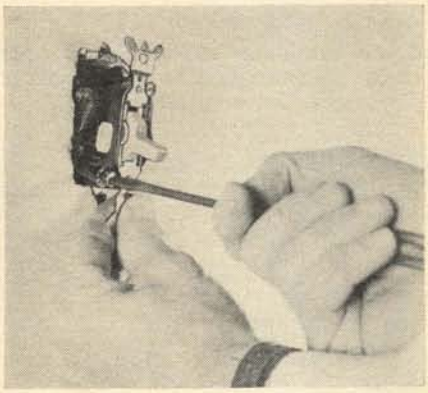
INSTALLING A SILENT SWITCH

V. Lee Oertle



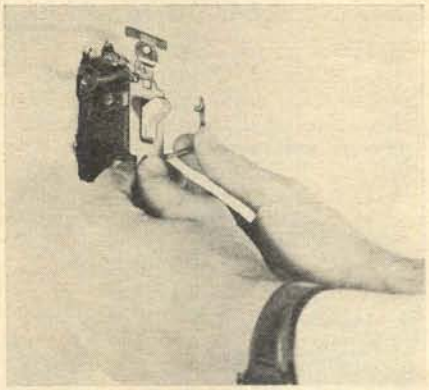
ORDINARY LIGHT SWITCHES "click" loudly when operated, adding one more annoying sound to our noisy modern homes. It takes only a few moments to replace a standard unit with a silent mercury type, which can be purchased wherever electrical supplies are handled. First—and most important—disconnect the circuit at the fuse box. The simple steps in the change are shown in the accompanying photos. △ △

With the switchplate replaced, the switch will appear exactly as with standard unit, but will be silent.

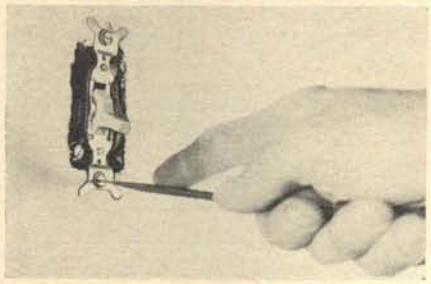


After shutting off the power, remove cover plate, then switch. Disconnect wires, as shown, remove switch.

After screwing switch to box, as here, turn on power and check for operation. If all right, replace cover, job is done.



Mercury-type switch is installed by reversing steps required for removal of standard unit; connections are same.



STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 Stat. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

WORKBENCH Magazine published bimonthly at Kansas City, Mo., for January-February, 1963. 1. The names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, John E. Tillotson II, 543 Westport Rd., Kansas City 11, Mo. Editor, Jay W. Hedden, 543 Westport Rd., Kansas City 11, Mo. Managing editor, none. Business manager, none.

2. The owner is: Modern Handcraft, Inc., 543 Westport Rd., Kansas City 11, Mo.; John E. Tillotson, II, 543 Westport Rd., Kansas City 11, Mo.; John E. Tillotson, 543 Westport Rd., Kansas City 11, Mo.; C. S. Tillotson, 543 Westport Rd., Kansas City 11, Mo.; Mary Ida Sullivan, 543 Westport Rd., Kansas City 11, Mo.; Wilburn L. Mead, 543 Westport Rd., Kansas City 11, Mo.; Sarah Peery, 543 Westport Rd., Kansas City 11, Mo.; Flower & Garden Foundation, 2318 West 95th, Leawood, Kans.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) . . . 320,000.

John E. Tillotson II

Sworn to and subscribed before me this 19th day of September, 1962. Wayne A. Moeller, Notary Public, Jackson County, Missouri. (My commission expires October 13, 1965.)

Here's your passport to happy, hobby evenings: detailed instructions for completing useful, attractive items in one evening apiece. Pick up your free copy at your nearest power tool dealer or Montgomery Ward store. Ask about Free Dream Shop contest. See SHOPSMITH and SAWSMITH in action while you're there.

"Practical POWER TOOL PROJECTS"

FREE at your SHOPSMITH and SAWSMITH Dealer

(Limited time offer)

SHOPSMITH is the only complete multi-purpose home power shop: saw, lathe, horizontal drill, vertical drill press and sander . . . ALL IN ONE. Fits in a bicycle's parking spot.

SAWSMITH is the world's most versatile radial arm shop. Performs 14 basic woodworking operations with 7-speed power selection. Gives built-in precision for every job!

MAGNA AMERICAN CORPORATION

Interstate 75 — Evendale, Cincinnati 15, Ohio

HARDWOODS

FOR THE HOME CRAFTSMAN

order DIRECT and SAVE!

Direct to you from the heart of the Appalachians, flaw-free hardwoods of fine even grain and uniform texture developed from years of slow growth under ideal atmospheric conditions. Black Walnut, Red Oak, Hard Maple, Aromatic Red Cedar plus many more domestic and imported woods. Educational Lumber Company offers fine woods in ideal quantities for the home craftsman. Order direct and save!

SEND FOR EDLCO FURNITURE & CABINET LUMBER CATALOG

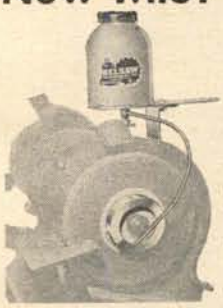
I am enclosing 25c for catalog of FURNITURE & CABINET LUMBER for the HOME SHOP CRAFTSMAN.

EDUCATIONAL LUMBER COMPANY
ATTN: E. M. CARR, JR., *President*
P. O. Box 5171 Asheville, N.C.

*Name*_____
*Address (street or RFD)*_____
*City*_____
*Zone*_____ *State*_____

FH W H

New MIST COOLING SYSTEM



speeds grinding — stops burning — eliminates dust — increases wheel life.

All advantages of wet grinding without mess or high cost.

Fits any bench grinder —requires no air compressor.

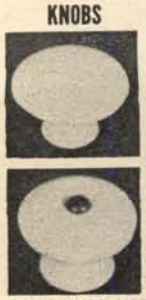
Feeds coolant through special wheel collar... sprays fine mist onto work.

Includes pint of concentrate to make 6 gallons of coolant. Money back guarantee.

ORDER TODAY—Complete Mist Cooling attachments .....only **$11.95 PPD.**

BELSAW MACHINERY COMPANY
803 Field Bldg., Kansas City 11, Mo.

PORCELAIN KNOBS



GENUINE PORCELAIN KNOBS OF AUTHENTIC EARLY AMERICAN DESIGN. BRIGHT, GLAZED WHITE SURFACE.

WITH CENTER HOLE
(Dark, round-head screws supplied)

No.	Diam.	Hght.	Price (each)
A	9/16"	9/16"	.20
B	11/16"	5/8"	.25
C	1"	3/4"	.35
D	1"	1"	.35
E	1½"	1¼"	.40

CONCEALED CENTER
(½" B/B adapter screws supplied)

#22	3/4"	5/8"	.40
#26	1"	2/4"	.50
#28	1½"	1"	.60

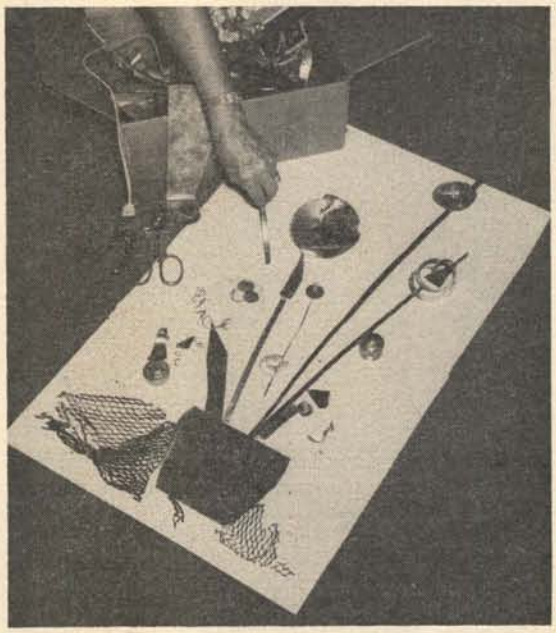
All prices POSTPAID. Minimum order $1
FREE LITERATURE

COLONIAL WORKSHOP P.O. Box 377 W W. Sacramento, Calif.

Women's Page

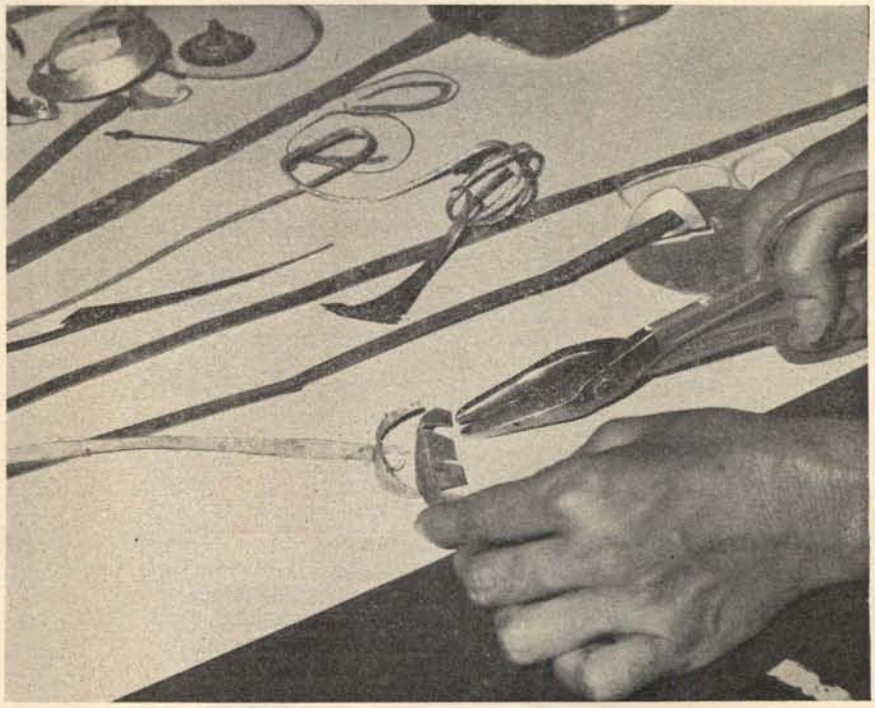
WORKSHOP COLLAGES

DONA Z. MEILACH AND ELVIE TENHOOR



1. For a flower composition arrange odds and ends on plywood to make a pleasing or amusing layout.

HELP YOUR HUSBAND the the next time he cleans his workshop. Pick up all the odd scraps of metal, screening, pieces of chain, springs and any other odds and ends that look interesting. You will have the material to make "collages" as in Figs. 4 and 6. "Chained to Time" is the title of Fig. 4. The background is enameled bright yellow, with smears of black in two of the corners. The figures of the men back to back were cut from a magazine. Fig. 6 is "Davey Jones's Locker". It is made by smearing spackle on a piece of plywood, then fitting pieces of material in the wet spackle

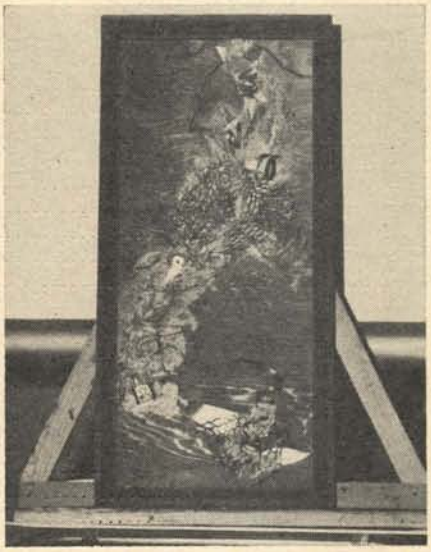


2. When making up your flowers, use wire for stems, cut sheet metal into interesting bud-like and petal-like shapes. Avoid standard shapes; be as unconventional as the materials permit.

3. After the objects have been cemented to the background, use water or tempera colors to add a background; one color, butterflies, etc.

5. For underwater or seashore scenes use spackle or plaster to cement various objects to board to provide three-dimensional, surrealist "painting."

and letting it set, Fig. 5. The close-up in Fig. 7 shows how the material is held in spackle. Figs. 1, 2 and 3 show how scraps of sheet metal, metal lath and odds and ends are used to create a surrealist three-dimensional "painting." Cement the various objects at several points on the board, but let them project so they cast odd shadows. Bright *splashes* of color on the background will highlight some of the objects. A streak or a smear of color also can be used to tie together various segments of a workshop collage. Use plywood no less than ¼ in. thick and seal the stock with shellac or varnish before cementing on the various items. Sealing the plywood will reduce the tendency of the material to warp from the moisture contained in the glue. △ △



6. Finished collage is framed, ready for hanging. Work like this is seen in museums of contemporary art, why not in your own home?

4. Parts from old alarm clocks, various kinds of chain suggest the "Chained to Time" as theme of collage.

7. Closeup of "Davey Jones's Locker" collage shows how various objects are buried in the plaster, held to board.

MIRACLE TOMATO
Yields 2 BUSHELS To a Vine

Now—You can grow the world's most amazing Tomato right in your own garden and get from 2 to 3 bushels of delicious ripe tomatoes from a vine.

BURGESS CLIMBING TRIP-L-CROP

TOMATO grows 16 to 20 ft. high with huge fruit weighing as much as 2 pounds and measuring 6 in. across. Fine, meaty, solid tomatoes, wonderful flavor. Unexcelled for canning and slicing. Outyields all other known varieties. Grows any place.

SPECIAL OFFER
Regular 50¢ Pkt. only 10¢
3 for 25¢ (*Limit 3 Pkts.*)

FREE: BURGESS Garden Guide Catalog listing unusual Seeds and Plants.

BURGESS SEED & PLANT CO.
Dept. 68, Galesburg, Mich.

Fantastic Savings on NEW
ACCORDIONS ½ OFF

SAVE UP TO ½ OFF PRICES OF COMPARABLE ACCORDIONS
40 New Models—Easy Terms
Just arrived! More than 40 exciting new models! Many new electronic accordions—amplifiers! Packed with *new* ideas, *new* styling, *new* features! Buy *direct* from world's largest exclusive accordion dealer! Importer-To-You Prices! Easy Terms: LOW DOWN PAYMENT. Money Back Guarantee. FREE BONUS GIFTS! Trade-ins welcomed—FREE Color Catalogs!

5 DAY FREE TRIAL
LIFETIME GUARANTEE

FREE New Color Catalogs—Discount Prices

Accordion Corporation of America, Dept. WK-13
2003 W. Chicago Ave., Chicago 22, Ill.
Send Free Catalogs—Special Discount Price List.
NAME .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
☐ Check here if you have a Trade-in.

FALSE TEETH BREAK?
GOOD NEWS ***Now repair them at home in 8 min.*** $1.98
Amazing PLATE-WELD repairs clear and pink plates and replaces teeth. Simply flow on—put together. Works every time—holds like new or money back. *At Drug Stores* or send $1.98 plus 22c handling to **Home Dental Aids Co., Box 1731, Dept. 19-A, Bakersfield, Calif.**

Learn **BAKING** *at Home*

Baking is one of America's high industries in wages. Not seasonable, but year 'round good field for trained and experienced men. Thorough basic spare time home study course lays solid foundation.
If you have the aptitude for this type of work, send for FREE Booklet, "Opportunities in Commercial Baking."
NATIONAL BAKING SCHOOL
835 Diversey Parkway Dept. 2101, Chicago 14, Ill.
Accredited by National Home Study Council

MAKE BIG MONEY
MAKING COSTUME JEWELRY AT HOME!

Thrilling spare-time, MONEY-MAKING hobby! Make newest, beautiful jeweled earrings, necklaces, bracelets, pins, pendants, cuff links, tie clips! Quick, easy to make—easier to sell to friends, neighbors, stores, at big profit! Details FREE!
DON-BAR CO., Dept. A-273
2934 W. Fullerton, Chicago 47, Ill.

LOSE UGLY FAT
Eat Spaghetti, too!

New Thinz Tablets go right to the cause of much overweight by ending *nervous overeating*. Also helps *stop nervous eating between meals!* Thus ugly pounds vanish for keeps when you follow the simple Thinz plan . . . without having to give up your favorite dishes.

Limited Introductory Offer gets you regular $3 size Thinz for only $1. Mail $1 with name and address to Thinz, Dept. WB-1, 1017 W. Diversey, Chicago 14, Ill. ©1961

Make your next project easy to move ... and enhance its beauty with free-wheeling Shepherd Supercasters. They roll easily over carpeted or uncovered floors—swivel instantly.

2" Satellite Carpet Saver

Shepherd Supercasters add a note of sparkling, distinctive quality that's unexcelled by the finest custom shops.

3" Saturn Floor Saver

The NEW smaller-size Satellite, like the Planet and Saturn models, is finished in antique copper or bright brass. NEW lower-priced Meteor comes in decorator colors of DuPont Delrin. See them all at your favorite hardware or department store.

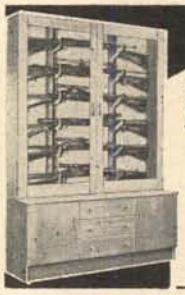
2¼" Meteor of DuPont Delrin

Write for free literature—

shepherd casters INC
P. O. BOX 672-S, BENTON HARBOR, MICH.
In Canada: 23 Railside Rd., Don Mills, Ont.

MAGNIFYING CLIP-ON GLASSES

Now you can read fine print or do precision work without eye strain. Finely ground lens magnify fine print for easy reading. Clip on your regular glasses. Satisfaction guaranteed, if no astigmatism or eye disease. State age, sex. Only $2.98 postpaid.
HOME OPTICAL CO., Dept. J-372, Chicago 41, Ill.



BUILD IT YOURSELF!
Gunberth® Plans & Ready-Cut Kits Now Available for the ALL-NEW
← **"Modern Marksman"**
Full Line of 32 models from 5 to 24 gun sizes available. BIG, NEW, fully illustrated
"Handbook" Catalog . . .
lists all details on Plans, Kits and Finished Cabinets. Send in NOW! Only $1.00 ppd. (Refundable first order) COLADONATO BROS.
Dept.32-F, Hazleton, Pa.

Print Your Own
Cards, Stationery, Advertising, labels, circulars, churchwork, tags, titles, etc. Raised printing like engraving, too. Save money. **Print for Others. Good Profit. Have a homeprint shop.** Sold direct from factory only. Pays for itself in a short time. Junior press $15; Senior $35 up. Easy rules sent. We supply everything. Write now for free details.
Kelsey EXCELSIOR presses
KELSEY PRESSES, X-95, Meriden, Conn.

Garden WINDMILLS
FULL SIZE PATTERNS

Beautify your lawn with these picturesque old windmills. 4 to 6 ft. high. Easy to make. Full size patterns and step by step instructions. Send only $1.25 for this big **WINDMILL PACKET** which includes patterns for both.
MASTERCRAFT PLANS, Dept. J19B
7041 Olcott Ave., Chicago 31, Ill.

Best Articles of 1962

HOME MAINTENANCE AND REPAIR

Building Kitchen Cabinets, Part III—Door Construction	January-February	14
Indoor-Outdoor Fountain	January-February	20
Garden Lights Add Glamour	January-February	24
Building Kitchen Cabinets, Part IV—Corner Cabinet	March-April	18
Building Kitchen Cabinets, Part V—Counter Tops	May-June	14
Expand Your Porch or Deck	May-June	20
Add a Bay Window	May-June	26
Beautify With Mosaic Tile	May-June	30
Tool House Doubles as Greenhouse	May-June	36
Plywood Fences	May-June	50
Building Kitchen Cabinets, Part VI—Cabinet for Counter Top Range and Sink	July-August	16
Beautify Your Windows	July-August	28
Installing a Pre-Fab Fireplace	July-August	30
Budget-Priced Luxury Pool	July-August	51
Care of Swimming Pool Hose	July-August	52
No Waste Space (In Your Cabinets)	September-October	13
Building Kitchen Cabinets, Part VII—Utility or Drawer	September-October	16
Plastic-Surfacing Concrete Apron	September-October	27
Installing Hardwood Flooring	September-October	28
Applying Asphalt Shingles	September-October	36
Wiring With BX Cable	September-October	42
Pipe Coverings	November-December	20
Building Kitchen Cabinets, Part VIII—Wall Hung	November-December	30
Refinishing Clinic (Stripping Kitchen Cabinets)	November-December	50

FURNITURE

The Right Slant on a Bookcase	January-February	17
Slim-Jim Chest	January-February	18
Hide-A-Door Bookshelf	January-February	23
Sewing-Machine Table	March-April	16
Doll-Display Cabinet	March-April	23
Rotating Library Table	March-April	24
Octagonal Game Table	March-April	26
Refinishing Clinic (Desk and Chair)	March-April	28
Bell-Buoy Lamp	March-April	52
Hepplewhite Chair	May-June	10
Early-American Hi-Fi Cabinet	May-June	18
Modern Sculptured Lamp	May-June	24
Refinishing Clinic (Piano)	May-June	34
Hepplewhite Dining-Room Table	July-August	12
Projector Storage Cabinet	July-August	15
Compact Chest of Drawers	July-August	20
Entry-Hall Divider	July-August	22
Card Table With Slide-Out Shelves	July-August	25
Country Commode	July-August	26
Refinishing Clinic (Explanation of Process)	July-August	48
Three-Cornered Coffee Table	September-October	10
Latticed Wall Rack	September-October	20
Multi-Purpose Slat Bench	September-October	22
Tray-Top Table	September-October	24
Twin Ranch Tables	September-October	34
Refinishing Clinic (Staining)	September-October	48
Compass Table	November-December	8
Hutch-Top Buffet	November-December	24
Child's Sofa and Chair	November-December	36

PROJECTS FOR EVERYONE

Picture-Frame Clock	January-February	5
Build a Grandfather Clock	January-February	10
Baritone Ukulele, Part II	January-February	26
Puppet Stage	January-February	29
Toy-Box Locomotives: Steam and Diesel	January-February	30
Mr. Giraffe Growth Chart	January-February	32
Little Ice Boat	January-February	36
Efficient Operation of a CB Station	January-February	42
Folding Easel	January-February	44
Nail-Keg Projects	January-February	46
Three Wastebaskets	January-February	48
Candle Holders	January-February	50
Antique Auto—Half-Scale Replica of a 1901 Touring Car	March-April	11
CB in Boating	March-April	42
Do-It-Yourself Trampoline	March-April	46
Low-Cost Pickup Camper	March-April	48
Swedish Wren House	March-April	50
Incubator for the Beginner	May-June	23
Coffee-Mug Tray	May-June	28
CB on the Farm	May-June	38
Make Your Own Marine Engine	May-June	42
Carved Book Ends	July-August	7
Pocket Photo Flash	July-August	42
Portable CB Transceivers	July-August	44
Dachshund Hors D'oeuvres Server	July-August	47
All-Purpose Garden Cart	July-August	54
Kit-Built CB Transceivers	September-October	40
Charging-Horse Wheelbarrow	September-October	54
Crane-Shovel Sidewalk Toy	November-December	6
Adjustable Auto-Trunk Extension	November-December	10
Fabulous Finishes for Fir Plywood	November-December	16
Noise Suppression for CB	November-December	28
Horse and Cart from Norway	November-December	34
Mighty Hunter	November-December	38
Lathe-Turned Nativity Set	November-December	40
Bandsaw-Sculptured Candlesticks	November-December	42
"Miterless" Picture Frames	November-December	44
Kiddie Kitchen	November-December	48

SHOP IDEAS

Traveling Checkerboard	January-February	34
Basic Cabinetmaking: Joinery, Part I	January-February	38
Rotating Parts Rack	March-April	31
The Art of Veneering	March-April	32
Basic Cabinetmaking: Joinery, Part II	March-April	36
Cutting Tapers with a Radial-Arm Saw	March-April	40
Tight Counter-Top Joints—Tite-Joint	May-June	32
Adjustable Sawhorse	May-June	40
Compressor Storage Tank	May-June	41
Putty: Craftsman's Friend	May-June	44
Cutting Plywood Panels	May-June	46
The New Model Shop	July-August	8
Care and Maintenance of Files & Rasps	July-August	32
First Aid for Rusty Tools	July-August	35
Keep Your Lumber Dry	July-August	36
Roll-Around Tool Cabinet	July-August	38
"Scratch Stock" for Hepplewhite Chair	July-August	40
Eye Safety in the Home Shop	September-October	14
Special Cabinet Trim	September-October	32
Versatile and Safe Planer-Shaper	November-December	58

WORKBENCH—WOMEN'S PAGE

Electrical Repairs	March-April	57
Plumbing Repairs	May-June	52
Replacing Broken Window Pane	July-August	58
Do-It-Yourself Wall Murals	September-October	56
Snow Scenes for Christmas (Table Centerpieces & Mantel Decorations)	November-December	56

Back issues available at 25 cents a copy. Sorry, out of March-April issue.

THE POCKET SIZE MACHINE SHOP

Dremel MOTO-TOOL

In your workshop, on your job — it's the handiest tool you'll ever own! Moto-Tool is ideal for precision grinding, polishing, carving, drilling, engraving, deburring, sharpening — does fine detail work with pin-point accuracy. It eliminates time-consuming hand work, gives the finished job a professional look. Moto-Tool weighs only 13 oz. — fits your hand like it belongs there. Fastest, most powerful tool of its kind — develops 27,000 rpm! Widely used by tool and die makers, model builders, craftsmen, lab technicians, repairmen, gunsmiths, schools.

See your dealer or write for free catalog.

Moto-Tool Kit No. 2 with steel case $29.95

No. 2 Moto-Tool only $19.95

DREMEL MFG. CO., Dept. 373-A, Racine, Wis.

Quality Power Tools Since 1934

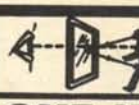
SAW WITH HEAT!

only $6.95 postpd. while supply lasts

NEW THERMO-SAW CUTS CLEAN AND FAST THROUGH WOOD, PLASTIC, STYROFOAM, EVEN ¼" PLYWOOD!

A real timesaver in any home workshop! Ideal for the home Craftsman to use in cutting difficult patterns, precision model-making, shaping tile, etc. Cuts up to 14" x 36" board. Special transformer produces High Frequency current from 110V 50/60 cycle AC house current. No noise vibration, sawdust or Radio-T.V. interference. No turning of work; tough stationary steel blade cuts in *every* direction. ONLY $6.95 POST PAID INCLUDES FREE PATTERN AND 12 SPARE BLADES. No C.O.D.'s, please. MONEY BACK GUARANTEE. Sold by Mail in U.S. only. ORDER TODAY.

BOISSELIER MFG. CO., Dept. W-13, Box 188, Glen Ellyn, Ill.



MAKE ANY WINDOW into ONE WAY GLASS

NOW . . with simple drug store materials, you can treat plain window glass so **YOU CAN LOOK OUT** through it, but the person on the other side **CAN'T LOOK IN AT YOU.** To get your Complete "One Way Glass Formula" send **only $1.00** to:

E-Z FORMULAS, Dept. 1487
5880 Hollywood Blvd., Hollywood 28, Calif.

10 different plans for **GUN CABINETS and RACKS**

Fully detailed, easy to follow drawing. Individually printed on heavy paper.

Only $1 postpaid

FREE LITERATURE

Plan-of-the-Month Club
Box 377, West Sacramento, Calif.

WORKBENCH CLASSIFIED

The charge for classified advertisements is 70 cents a word payable in advance by check, cash or money order. All classified set solid, without display, leaded, or blank space. All copy subject to publisher's approval. For clarity, please type or print your copy. Be sure that check, currency or money order accompanies copy. When figuring the number of words be sure to include name and address. For example: W. C. Jones, is three words. Send your copy in at once. Closing date for classified advertising is the first of the second month preceding publication. Minimum 10 words.

AGENTS AND SALESMEN

MAKE PROFITABLE Men's-Women's wear. Sample Free. Sunmade, Brockton 64, Massachusetts.

FREE SAMPLE, Beautiful Curios! Sell on Sight! Apartado 9036, Mexico City.

SENSATIONAL NEW longer-burning Light Bulb. Amazing Free Replacement Guarantee—never again buy light bulbs. No competition. Multi-million dollar market yours alone. Make small fortune even spare time. Incredibly quick sales. Free sales kit. Merlite (Bulb Div.), 114 E. 32nd, Dept. C-74B, New York 16.

SELL GREETING Cards—Make Extra Money. All Occasion Assortments, Easter, Valentines; Stationery, Gifts, Wrappings, Toys, Jewelry. Experience unnecessary. Salable Samples on Approval; Free Catalog, Free Gift Offer. Bonus Plan. Write Hedenkamp, 361 Broadway, Dept. WR-14, New York.

IF YOU'RE interested in making money in selling see the hundreds of exceptional opportunities in Salesmen's Opportunity Magazine. Send name for your copy, absolutely free. Tell us what you're selling now. Opportunity, 848 N. Dearborn, Dept. 29, Chicago 10, Ill.

BUSINESS OPPORTUNITIES

MONEYMAKING OPPORTUNITIES Galore! Free Copy. Popular Mechanics Classified, 740-CM Rush St., Chicago 11.

MAKE FIGURINES: Cement Lawn Novelties. Molding Rubber. Extra Thick. Free Sample. W. Wooley, 1915-P North St., Peoria, Ill.

PLASTERCRAFT MOLDS, liquid rubber, plasters, flocks, candle supplies. Catalog and manual free. Blue Rapids Supply, 505 Main, Blue Rapids, Kans.

LEARN FLOWER Designing (Professional Flower Arranging) Florists pay qualified designers up to $150.00 week. Or start home business part or full time. Earn while learning. Free—full details and 3 month subscription to "Flower Talk" magazine. Floristry, 3570 W. First Street, Los Angeles 4.

FREE SUCCESS Plan. Baby Shoe Bronzing Business. We Finance. Box 5036K, Inglewood, Calif.

MAKE TELEPHONE Surveys Spare time! Free home-business details. No selling, choose your own hours. Telephone Institute, Dept. V1, 1038 So. LaBrea, Los Angeles 19.

AMAZING NEW Home Plastics Business! Up to $10.00 hour if you qualify. Pleasant, easy, No Selling. Secrets revealed in Free Plan. NPC, Box 23321-ME, Los Angeles 23.

I MADE $40,000 Year by Mailorder! Helped others make money! Start with $10.00—Free Proof. Torrey, Box 3566-E, Oklahoma City 6, Okla.

ANNOUNCING HOME study course in commercial baking. Practical basic training. Good field for those with aptitude. Free booklet, "Opportunities in the Baking Industry." National Baking School, 835 Diversey Pkwy., Dept. 1631, Chicago 14.

$250.00 WEEK SPARE Time profit possible. Earn at home with new fascinating printing method. $5 starts you—send no money now. Free confidential Facts and Valuable Sample. Screen Print, Dept. JV1, Los Angeles 61.

$15.00 AN HOUR possible in new Home Manufacturing Business. Spare or full time. Amazing velvet-spray transforms hundreds of old items into $$$$ products. Write for samples, free "50 Business Opportunities Booklet." Craft Industries, Dept. JV1, Los Angeles 61.

DOLLS! DOLLS! DOLLS! We teach you to make, repair, dress and sell. Study at home. Earn while learning. Free Booklet. Doll Hospital School, Studio WBC-13, 11826 San Vicente Blvd., Los Angeles 49, Calif.

WANT TO Make Big Money At Home? $10.00 profit in an hour possible with Invisible Mending. Make tears, holes disappear from clothing, fabrics. Steady year-round demand from cleaners, laundries, homes. Details Free. Fabricon, 1543 Howard, Chicago 26, Ill.

LEARN FLOWER Arranging and Floristry: Start your own business, part or full time. Many good paying positions open. Earn while learning. Send for Free Booklet. National Floral Institute, Studio WBC-13, 11826 San Vicente Blvd., Los Angeles 49, Calif.

BUY IT WHOLESALE

BARGAINS! Buy wholesale! Save Money! Free catalog! Norris, 273-W Merrick Road, Lynbrook, N. Y.

Candle Decorating Supplies

CANDLE MAKING, Decorating Supplies, tools, equipment, instruction. Also full line of cake decorating, candy making items. Largest selection. Lowest prices. Send 25c today for big new catalog, applied to first order. General Supplies, Dept. G-326, Fallbrook, Calif.

COINS

TOPS! Fascinating coin collection from Cameroons, Formosa, Vatican, etc., and Foreign Banknote. Catalog Price Over $1.50! Only 10c with exciting coin approvals! Littleton Coin Company, Littleton T-13, New Hampshire.

TRUNKFUL 25,000 Indian-Lincoln cents mixed (from the 1920's & older). Will pack "Grab-Bag" style. 400 mixed—$25, sample bag of 20—$2. Mrs. Fischer, Box 5490, Sherman Oaks 41, Calif.

CRAFTS, SUPPLIES

SKIL-CRAFTS New 62-63 Catalog. Largest and Finest selection of Leathercraft, Artist, Hobbycraft supplies in the world. Free Gift with first order. Send 50c. Refundable with first order. Skil-Crafts, Box 167-W, Joplin, Mo.

EARTHWORMS

FREE LITERATURE. Make Big Money raising fishworms and crickets. Carter Farm-32, Plains, Ga.

EARN MONEY raising fishworms for us! Exciting details free! Oakhaven-27, Cedar Hill, Texas.

MEN!—WOMEN! Make money raising bait at home for us! We buy your crop! Details free. Red Wigglers, Warsaw 17, Ind.

FLORIDA LAND BARGAIN

FLORIDA'S GREATEST homesite value. High, dry ¼ acre site, $495. No money down, $10 monthly. Free photos, write Dept. 670-6, Rainbow Park, Box 521, Ocala, Fla. (AD 62070-K-O)

GUNS

WOODCARVING, GUNSTOCKS. Miniature animals, figurines. Hermania Anslinger, 320 South Ralph, Spokane, Wash.

HOBBYCRAFT

HOBBYCRAFT SUPPLIES. Wholesale only, illustrated catalog 10c. (Direct), Cortez A, Florida.

HOME CRAFTSMEN

BEAUTIFUL flower wheelbarrow, 20"x47". Easily made, sturdy. Full size patterns and directions. Only $1.00. Mastercraft J20B, 7041 Olcott, Chicago 31.

MAKE PLASTIC novelties for extra income. Low cost home training now available. Write for free booklet. Interestate Training Service, Dept. D-7, Portland 12, Oregon.

WOODWORKERS — HOME WORKSHOP — catalog 132 pages. Save on fine woods, hardware, power tools, 25c. Craftsman, 2719 S. Mary, Chicago 8, Ill.

BUY PICTURE Frame Mouldings at wholesale. All styles and widths. Necessary Tools, too. Free deliveries in U. S. A. Write for price lists. Chesapeake Picture Frame Company, 414-D East Baltimore St., Baltimore 2, Md.

16 LAWN chairs, 22 Tables, Benches, Trellises. Plans and necessary patterns. $1.00. Mastercraft, J3B, 7041 Olcott, Chicago 31.

VIOLIN MAKING Supplies. Free catalog. Fred Artindale, 1243 Palm, San Luis Obispo, Calif.

SAVE: RAW picture frame moulding, all species, all styles. We will miter corners. Bauerle Cabinet Works Inc., Hammond, La.

102 FULL SIZE Toy—Novelty—Lawn Patterns $1.00. Pattern Service, Medway 2, Mass.

CASH MARKETS for Handicrafts! Thru, "Trading Post Magazine". Copy, 25c. Thorne's, 525 Dewey, Jackson 18, Mich.

30 BIRD HOUSE and Feeder patterns for Martins, Wrens etc. Only $1.25. Mastercraft, J16B, 7041 Olcott, Chicago 31.

LAMPS—MAKE from bottles, jugs, vases, Oil lamps restored and electrified. *All parts with* prices and instructions shown in handbook. 50c—refunded first order. Gyro, 5208 N. W. 35th Ave., Miami 42, Fla.

NEW! ORIGINAL! Shop projects to make for children. Send $1.00 for five designs. Merklin, Dept. 10A, 2702 N. E. 105, Portland 20, Oregon.

HOME SHOP Business, casting figurines, plaques. New fast selling copyright designs. Interesting, profitable life time profession, easily learned. Plastex, P.O. Box 3061, Denver 18, Colo.

68 POPULAR plans and patterns. Lawn chairs, Ornaments, Bird houses, Novelties, Shelves. $1.00. Mastercraft, J1B, 7041 Olcott, Chicago 31.

HOME MOVIES, COLOR SLIDES

8mm, 16mm, MOVIE SUBJECTS — silent, sound—new, used—2"x2" color slides—biggest selection anywhere! Free, each month, big 24-page newspaper-size catalog! Blackhawk Films, Davenport 21, Iowa.

INSTRUCTIONS

CAMERA REPAIRMEN greatly needed! You can learn manufacturers' service methods at home, in your spare time! Free, big illustrated book tells how! Write today. National Camera Repair School, Dept. WC-1, Englewood, Colo.

LEARN REALISTIC Oil Painting by correspondence. Amateur and advanced. Walker School of Art, Box 486, Montrose 8, Colo.

WRITERS WANTED for Magazines, Television, Newspapers, Motion Pictures. Easy to learn Home-Study Course shows you how to write and sell stories. Free!—Revealing Book, Lesson, Writers Magazine, and Aptitude Test. Write: Palmer Institute, 6087-V1 Sunset, Hollywood 28, Calif.

OIL COLORING Photographs—A fascinating hobby or profitable sideline for those with artistic talent. Learn at home. Easy simplified method. Free booklet. National Photo Coloring School, 835 Diversey Parkway, Dept. 1631, Chicago 14.

MINERALS & PRECIOUS STONES

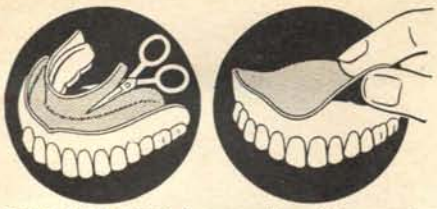
ROCKHOUND — GEM CUTTERS — Jewelry Makers . . . new Free catalog—just off the press! Biggest supplier to hobbyist and craftsman offers you tools, materials, equipment, introductory bargains and know-how. Free Catalog . . . Write *Grieger's, Dept. C-5*, 1633 E. Walnut, Pasadena, Calif.

MISCELLANEOUS

YOU CAN Chalk Talk. 40 page Catalog, 10c. John Balda, Trick Cartoonist, Oshkosh, Wis.

LETTERS—REMAILED, Secretly, Professionals. Write: DeGraff, Box 14156W, San Diego, Calif.

"LISTEN-IN-COIL" picks up any telephone conversation in vicinity. No connection to telephone necessary. Easily concealed. $2.98 complete. Acoustical Research, M512 East 80, NYC 21.



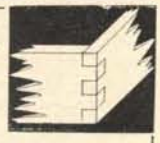
TEETH STAY TIGHT for months with amazing new soft pink liner. Eases sore gums giving you lasting comfort — eat anything. Ends daily bother with stickums you swallow. Easy to use — pure — harmless — gentle — brushable — clean — removable. Fills out shrunken mouth making you look and feel younger. Holds dentures tighter longer or your money back. Save money and time—send $1.00 for big sheet or ask for information. Plasti-cushion. WO-13 85. Elyria, Ohio.

NEW "LIFETIME" RADIO NEEDS NO BATTERIES TRANSISTORS PLUG-INS!

ALWAYS PLAYS — NEVER RUNS DOWN! Gets local radio stations ANYTIME, ANYWHERE. Permawave detector. BUILT-IN SPEAKER-PHONE. NO DANGLING EAR-PHONES. Lifetime guarantee. Send Only $4.99 (cash, ck, mo) for postpaid delivery. Ideal boys or girls radio. Available only from:

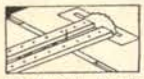
Midway Company
Dept. PW-2 Kearney, Nebr.

AMAZING BOX JOINT DEVICE



Box join the hardest wood with extreme accuracy. **$4.98** Attach to saw fence and you're in business. Send check or M. O. to

HOWE MACHINERY
Dept. W-7, 30 Gregory Ave., Passaic, N. J.

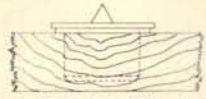


NOW! CUT CIRCLES WITH YOUR CIRCULAR SAW

$4.95 POSTPAID

Amazing CIRCLE MASTER, new patented attachment, permits you to cut all circular shapes on any make bench saw. Diameter adjustable up to 30" on small saws, bigger on large saws. Make chairs, table tops, wheels, trays, lazy susans, stools, coasters. Beveled, shoulder, cove, moulding and many other cuts. Completely satisfied or your money back!

VERDAN DISTRIBUTORS, INC.
570 Thomas Ave. Rochester 17, N. Y.



DOWEL CENTERS with the extra top lip for easy removal. 5 most popular sizes. Set No. 24—10 Pc. 1 Pr. of each ¼"-5/16"-⅜"-7/16"-½" in a plastic box. 1 set $1.25, 2 sets $2.25, P.P. Other tools No. 21 Adjustable Stop Gauge (Patented) for cutting accurate lengths on bench and radial saws only $5.95 P.P. No. 25 6" Drill extension for ¼" or larger electric drills or drill presses, $1.25 P.P. Order today or send for free information.

L. STAHL MFG., Dept. W.B. 3166 Wadsworth, Saginaw, Mich.

MAKE MONEY SELLING TIES

Buy DIRECT From MANUFACTURER
Sell outstanding line of Slim Ties, Tie & Kerchief sets and New Ready Knotted Tie with Plastic Hook.

Write for FREE CATALOG

Special Introductory Offer
Send $2.00 for 1 Slim Tie, 1 Tie Kerchief Set with Pearl Tack, 1 Ready Knotted Tie with Plastic Hook, 1 Ready Knotted Tie with Kerchief and Pearl Tack. We pay pstg. Money Back Guarantee.

PHILIP'S NECKWEAR, Dept. 582
20 West 22nd St. New York 10, N. Y.

MONEY in DONUTS

Bake new greaseless donuts in kitchen with small electric appliance. Grocers & cafes sell for you. Materials cost 19¢ a doz. Stores pay you 48¢ a doz. Your profit 29¢ a doz. Start in spare time serving 5 or 6 nearby stores. Later do a full time business. A user who operates 4 appliances added other baked items to his line. Last year he did a gross business of $61,000.

Send for FREE RECIPES. Bake this superior donut in oven and serve with coffee to some friends. Their comments will tell you this is way to make money.

A. RAY CO., 3605 S. 15th Ave., Minneapolis 7, Minn.

89 JIG SAW PATTERNS · UP TO 21" HIGH · $1

89 FULL SIZE patterns of beautiful Wall & Corner Shelves, Bird Houses, Action Toys, Novelties, Lawn & Animal Figures, Flying Duck, Sprinkling Girl PLUS dozens of other easily made things. Just trace, cut out & paint! Order the JIG SAW PACKET today. Only $1.00.

MASTERCRAFT PLANS, Dept. J4B
7041 Olcott Avenue, CHICAGO 31, ILL.

MUSIC, MUSICAL INSTRUMENTS

PIANO ROLLS, New QRS, Free catalog. Piano Roll Corner, 317 Lafayette, Utica, N. Y.

OF INTEREST TO WOMEN

CANDLE MAKING & Decorating. Terrific Hobby. Great Business: Learn Fascinating molding, dipping, creating & decorating candles for year-'round demand—holidays, birthdays, weddings, anniversaries. All Events. Spare time fun & extra income now; expand to colorful candle shop later. No age limit. Write for free facts on home instruction method. Candle Institute, Dept. X-901, Fallbrook, Calif.

EARN $50.00 Fast, sewing aprons. Details free. Redikut's, Loganville 62, Wisc.

MAKE $25-$50 week clipping newspaper items for publishers. Some clippings worth $5.00 each. Particulars free. National, 81, Knickerbocker Station, New York City.

$100 WEEKLY possible. Compile mailing lists and address envelopes for advertisers. Home-spare time. Particulars free. National Service, 81, Knickerbocker Station, New York City.

EARN up to $2.00 hour sewing babywear! Free Details. Cuties, Warsaw 4, Ind.

LEARN EXPERT Cake Decorating, Candy Making. Free details on home instruction method. Candy & Cake, Dept. D-601, Fallbrook, Calif.

EARN MONEY at home, sewing aprons for merchants. We supply materials! Write: Jiffy Aprons, Ft. Walton Beach 14, Fla.

OLD GOLD & JEWERLY WANTED

CASH IMMEDIATELY For Old Gold—Jewelry, Gold Teeth, Watches, Diamonds, Silverware, Spectacles. Free Information. Rose Industries, Heyworth Building, Chicago 2.

PATENTS, INVENTIONS

INVENTIONS NEEDED immediately for manufacturers. For additional information write Kessler Corporation, C-191, Fremont, Ohio.

PLASTICS

NEW LIQUID Casting Plastic, clear, colors. Embed real flowers, butterflies, photos, coins. Send 25c for two handbooks, "How to Cast Liquid Plastics" and "How to Make Extra Money at Home". Castolite, Dept. B-109, Woodstock, Ill.

EMBEDDING, CASTING secrets free. Sample, 25c. Crystal, 4350-G N. Whipple, Chicago 18.

SHELLCRAFT

SEASHELLS, SHELLCRAFT and Jewelry Supplies. Illustrated Catalog 25c, refunded on first order. Florida Supply House, Box 847H, Bradenton, Fla. Our 29th year.

STAMPS

100 OLD U. S. stamps between 1861 and 1935 only $1.00. Roush Stamp Co., 51 Chestnut, Mansfield, Ohio.

FREE—50 Different Stamps, with approvals. Fahsing, Dept. W. Atascadero, Calif.

225 STAMPS only 10c with approvals. Mystic, Camden 22, New York.

TERRIFIC STAMP Bargain! Israel-Iceland-San Marino—plus triangle set—plus Antigua-Borneo-Virgin-Scouts-Congo-Russia—Plus large stamp book—all four offers free—Send 10c for mailing cost. Empire Stamp Corporation, Dept. PH, Toronto, Canada.

U. S. GOVERNMENT SURPLUS

JEEPS, $264.00. Radios, $2.53. Guns, typewriters, cameras, tools, thousands of items. Fabulously low surplus prices. Complete information sent immediately. Send $1.00 to—Surplus, P.O. Box 50512, Dept. WMH, New Orleans 50, La.

WHOLESALE

HOBBYCRAFT SUPPLIES. Wholesale only, illustrated catalog 10c. (Direct), Cortez B, Florida.

WILL FORMS

TWO "WILL" FORMS and "Booklet on Wills," $1.00. National, Box 48313WB, Los Angeles 48, Calif.

WOODWORKING

MAKE $46 From Square Foot Plywood; Jigsaw necessary. Free Information. Woodarts C-7, Bridgewater, Mass.

$200.00 MONTHLY. Spare Time. With Tablesaw, Bandsaw or Jigsaw. Write: Holiday House, D3800 Harney, Vancouver, Washington.

MAKE YOUR POWER SAW SAFE! USE THE NEW SAF-T-RIP GUIDE ..AND TURN OUT BETTER WORK!

Don't risk serious hand injuries any longer! Order this patented, easy-grip, SAF-T-RIP Guide for better, SAFER POWER-CUTTING JOBS. BETTER WORK, TOO. NO more clumsy, tricky push sticks. NO more whipping and chattering. And NO slotting, grooving and dadoing troubles. SAF-T-RIP Guide is made of aluminum — slides easily along work table fence. Works with almost any model—any make table saw on the market (not radial saws). Has laterally adjustable bar with screw adjustment to fit any fence up to 3" high and from 11/16" to 1-9/16" wide. Pair of dogs firmly hold work in place, advance it at top saw capacity.

MUST-WORK GUARANTEE — 100% SATISFACTION OR YOUR MONEY BACK . . . PROTECT THE ONLY PAIR OF HANDS YOU'LL EVER OWN.

ORDER YOUR SAF-T-RIP GUIDE TODAY! ONLY $3.98 PPD.

ALSON MANUFACTURING CO. Dept. W-13
937 N. Evans Street, Pottstown, Pa.

Gentlemen: Enclosed is my check ☐, money order ☐, for $3.98 for my SAF-T-RIP GUIDE. I understand that I may send this back for full refund if not 100% satisfied.

NAME_____
STREET_____
CITY_____ ZONE____ STATE_____

BEL•SAW•SHARPNER

only $39.50
Shipped Prepaid
Easy Payments

NOW YOU CAN BE AN EXPERT SAW SHARPENER . . . Without any previous experience you can sharpen **all** popular types and sizes of circular saws. Save money on your own sharpening . . . make money sharpening for others.

Bel • Saw • Sharpner quickly attaches to your bench grinder or any motor equipped for grinding wheel.

Compact, portable, mounts right or left of motor. Rounds saw to perfect circle, grinds tooth gullets to uniform depth, shapes and sharpens teeth. Tapered cone takes all popular saws. Gives correct hook angle. Scale for BEVEL grinding up to 30°.

Order Today—Money-Back Guarantee

Use the **Bel • Saw • Sharpner** for 30 days . . . if not fully satisfied we refund your money. All parts guaranteed for FIVE YEARS.

Comes to you with saw grinding wheel, dressing brick, complete illustrated directions.

Shipped PREPAID $39.50 or $10 down $10 a month.

BELSAW ENGINEERING CO
443 Field Bldg., Kansas City 11, Mo.

New Isotronic Training Method

LEARN TV REPAIR IN ONE SHORT WEEK!

Now, after 5 year's research—a streamlined training system that *obsoletes all others!* In just 7 days you may earn $150 weekly, without paying up to $250 for training, studying long months! Developed by electronic scientists *in cooperation with major* TV mfr's., the new Isotronic method is the most *practical* ever devised! For conclusive proof, write for details and FREE SAMPLE LESSON. Use it on your own set or a friend's — repair it — convince yourself you can make *big money immediately* in your own TV business! Hurry — Free Lesson, revealing PLANS. Write:

TV SERVICING SYSTEMS, Dept. J791
1038 So. La Brea, Los Angeles 19, Calif.

Constructive and Profitable...

. . . and enjoyable. Manufacture and sell ornamental concrete items in your spare time. Warning, it could become a rewarding, full-time business. It has for many, many others, why not you?

NO. 447 GRECIAN JR.

Mold makes concrete item 9¾" high. Price of Mold only $30.00 AND, there are over 300 others to select from.

NO. 100 PEE WEE

Mold makes complete Concrete Bird Baths 11" high, 17" diameter. Price of Mold only $45.00. And there are over 300 other molds to select from.

We manufacture and sell on a direct basis the industry's best molds. Durable, Dependable, High Quality, and of Aluminum. 96-pg. "How To Turn Concrete Into Gold" includes 29 pgs. of priceless instructions for professional results. Describes and Prices over 300 molds for Bird Baths, Benches and Tables, Flower Urns, Statues, Animals, Religious Items, and many more from 2" to 68" high. It gives the full story. Order yours TODAY—Rushed to you by First Class Mail. It's only $2.00.

HOW TO TURN CONCRETE INTO GOLD — SEND $2

Manufacture And Sell Your Own Ornamental Concrete Items

OVER 300 DIFFERENT DESIGNS

Concrete Machinery Co., Inc.

839 Lenoir Road, N. W. • Hickory 5, N. C.

LOW COST WELDER

WELD - BRAZE - SOLDER - CUT

NO OTHER WELDER AT THIS PRICE INCLUDES THIS COMPLETE EQUIPMENT—FULL FACE SHIELD, HEAVY CABINET, GROUND CLAMP, HEAVY WELDING CABLES PLUS twin carbon arc torch, welding rod holder, carbons, welding and brazing rods, flux, solder, instruction book. Make and repair auto bodies, parts, fenders, trailers, boats, metal furniture, fixtures, ornamental iron, farm equipment, garden tools, bicycles, toys, etc. Operates on any properly wired 115 V. line. TEN-DAY FREE TRIAL. FULL ONE-YEAR GUARANTEE. More than 250,000 in use in homes, garages, farms, shops, factories. Now ANYONE can weld, braze, solder, cut, heat metal without experience. Does 1001 jobs on all metals. Save and earn money.

SEND ONLY $2.00

Pay postman $12.95 plus C.O.D. charges. Practical lifetime gift for hobbyist, mechanic, auto restyler, hot rodder, homeowner. Order today on 10 DAY MONEY-BACK GUARANTEE.

FOUR WAY WELDER CO. 1810 S. FEDERAL ST. DEPT. W19B CHICAGO 16, ILL.

NEW 1963 CATALOG

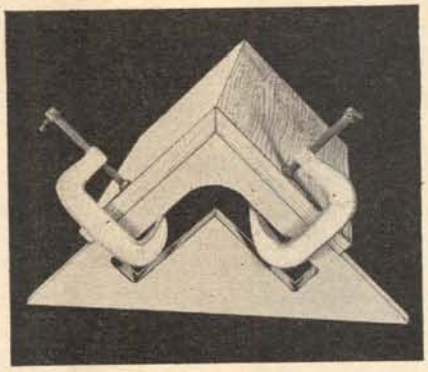
CRAFT MATERIALS and SUPPLIES

94 pages of new materials for woodworking and crafts . . . new furniture trim, art glass, plastics, fiber glass, mosaic tile, lamp parts, mouldings and other hard to get items. Illustrated and with money saving mail order prices. Just send 25c which will be refunded with your first order.

MINNESOTA WOODWORKERS SUPPLY CO.
1713 Olson Hwy., Minneapolis 5, Minn.

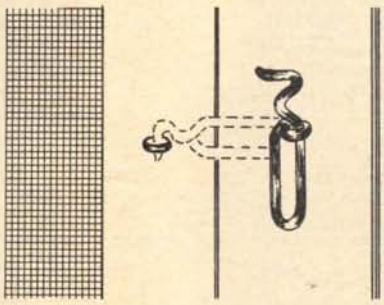
SHOP TIPS

Jig For Miter Joints



One or more jigs, such as shown in the photo will make it easier to clamp miter joints until the glue sets. Make the cut-out in the jig with a coping or jig saw. Just be sure the two clamping edges form a 90-deg. angle. Use ¾-in. or heavier plywood for the jig.
De Cristoforo, Calif.

"Stay Clear" Door Hook

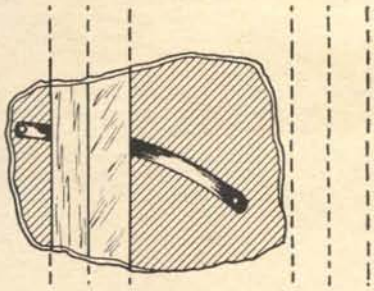


Even when fitted on the frame, rather than the door itself, a hook may often be jarred up and catch between the door and frame. Avoid this problem by shaping a hook with an elongated eye from stiff wire. The long eye will hang down, prevent the hook from swinging.
Daniel Bousha, Jackson, Mich.

Improvised Nail

When I needed just a couple of nails to finish a project one weekend—and all the stores were closed—I made them. I cut a couple of lengths of coathanger wire, flattened one end of each, filed the other ends to a point. For more of a head the ends of the wire can be split with a hacksaw and the resulting ends bent downward to produce a "T-head" nail.
C. Kimbrough, Prairie Village, Kans.

Removing Wall Stud

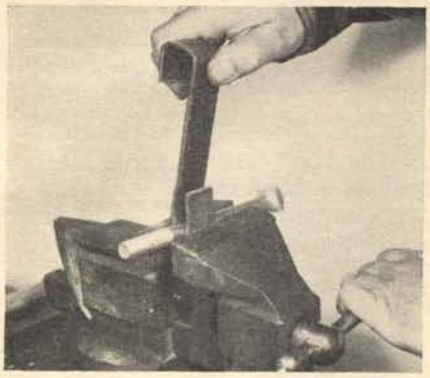


It is not necessary to disturb both sides of a wall when a stud is to be removed for installing a cabinet, or some similar operation. Instead, chop a hole in the wallboard to accommodate the item to be installed, then slip a hacksaw blade between the stud and the inner surface of the wallboard on the opposite side of the wall and saw off the nails holding the wallboard to the stud. Finally, cut the stud and lift it out. You need only patch the nail holes.
Edward Bentley, Jackson, Mich.

Aligning Hinges

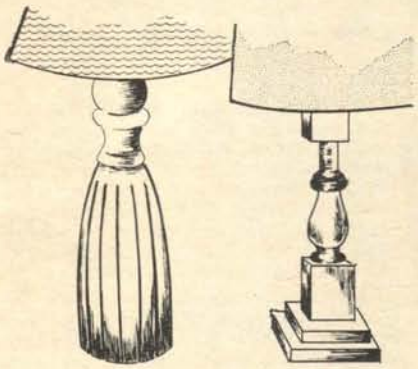
If you do not have a self-centering punch or drill for wood screws, keep hinges aligned when attaching by using this method: Locate each hinge, punch a starting hole with an awl, then drive the single screw in each hinge. Adjust the hinges so they are aligned. Now, mark the centers of the remaining holes, then drive the screws. This method eliminates the problem of having the hinges twisted as screws are driven singly, each screw pulling the hinge a different way when it seats.

Bending Steel Bars



It is difficult to bend steel flats with any degree of accuracy, but you can come close by using various items of hardware in your shop to take the place of dies. Use large bolts to make loops and hooks, square or oblong steel blocks will help to make neatly squared corners. Start the process by making a "free" bend at one side, then hammer that end over so it holds the "die" in the vise jaws.

Lamps From Furniture Legs



Before discarding old furniture, remove the legs and any other fancy turnings. They can be converted to lamps by drilling them lengthwise for a piece of electrician's pipe, then adding a lamp harp and suitable base.
M. Robert Beasley, Jackson, Mich.

In the Next Issue . . .

Shop In a Workbench

Colonial Speaker Cabinets

Kit-Built Bandsaw

Renewing Kitchen Cabinets

Work-Display Cabinet For Models

SATIN LUSTRE
WOOD LORE
NATURAL WOOD FINISH
FOR ALL INTERIOR SURFACES
WOOD LORE, the easiest way to get that "hand-rubbed" look *without* rubbing! Make it the *last coat* on the job, even on pre-finished wall paneling ... adds extra lustre and protection. Pierce & Stevens Chemical Corp., Buffalo 5, N. Y.
AT PAINT, HARDWARE, LUMBER STORES

UTILITY FLOOR JACK
• VERSATILE • STRONG • ECONOMICAL
LIFTS 10,000 LBS.! • • • SUPPORTS 20,000 LBS.!
COMPACT JACK: small size can be used in hard-to-reach places, to raise all kinds of heavy weights.
ONLY $3.95
3 for $11.50
Money back guarantee—Order by mail Immediate delivery—we pay postage.
Supports floor beams, porches, house trailers, steps, walls, roofs, or rubbery floors. Used for levelling floors in homes, barns, garages, cottages, farm buildings, porches, etc. Adaptable for use with 3" or 3½" steel pipe or 4" x 4" wood posts. Cut your own pipe or 4" x 4" wood post to 3" less than necessary height; use jack for a 3" rising lift on any height from 4 inches to over 12 feet.
WRITE FOR OUR FREE CATALOG OF FINE TOOLS
DRUMCLIFF CO., Dept. 772, Towson 4, Md.

New Free Booklet!
Handy Hints ON NEW, EASY WAY TO EARN MONEY FOR YOUR CHURCH
Free
America's quality distributor of unusual and practical items that are proven money-makers for any group that has a fund-raising project.
Gifts, Gadgets, Candies, Cards
Imports, housewares, jewelry, toys, greeting cards and wraps, novelties. Generous profits.
WE FINANCE YOU
Send no money! We give established organizations 30 days from invoice to make payment. No risk to you. You hold your event and pay later. Send for the booklet at once.
ADRIANE FUND RAISING PROJECTS
3-944 Park Square, St. Paul 1, Minn.

MAKE-DECORATE Candles FOR FUN OR PROFIT!
Men, women, ANY age! Learn to create, design & decorate unusual candles for all occasions! FUN, fascinating hobby or spare time business. Expand to colorful candle shop, later. ENORMOUS DEMAND... friends clubs, stores, churches, everyone will clamor for your original, unusual candle shapes, colors, types & scents. As little as 10c in material brings $2 income! All ages delight in this easy-to-learn craft. No artistic ability required... We show you how. Send TODAY for FREE FACTS on home instruction method. CANDLE INSTITUTE, Dept. X-902, Fallbrook, Calif.
CANADIANS ADDRESS: Dept. X-902, P.O. Box 1111, Montreal.

PARKS 12" THICKNESS PLANER
MORE THAN 40,000 IN USE ALL OVER THE WORLD
The PARKS No. 95 is a compact, sturdy thickness planer that offers mill planer precision and ruggedness at a sensationally low price! Write for complete descriptive literature on the No. 95 Planer, as well as on PARKS wood- and metal-cutting Band Saws; Radial Saws; Planer-Jointer Combination Machines; horizontal and vertical, manual and automatic Panel Saws.
THE PARKS WOODWORKING MACHINE CO.
Dept. WB, 1546 Knowlton St., Cincinnati 25, Ohio
Manufacturers of Quality Woodworking Machines Since 1887

Learn ELECTRIC APPLIANCE REPAIR IN YOUR SPARE TIME AT HOME
START YOUR OWN BUSINESS
With a Potential Market of 100,000,000 Customers
New shop-method home-training system gives you electrical know-how that used to take years to learn. Learn at home by building valuable testing kits, repairing your own and neighbors' appliances. It is not unusual for appliance repairmen to charge on the basis of $5.00-$6.00 an hour.
FREE ILLUSTRATED BOOK
Shows you how you learn every phase of electrical appliance repair. How to make money while you learn. Write today for your FREE copy.
CHRISTY TRADES SCHOOL, Dept. A-2164
3214 W. Lawrence Ave. Chicago 25, Illinois

REVOLUTIONARY NEW JOINER
HOWE EDGE GLUING CLAMP
Joins any edge. You've needed this for years! No more rope tabernacles or complicated set-ups. Just adjust to any size up to 30", drive hard wood wedges and you're in business
$5.25 each. $9.98 pair pod.
Send check or money order to:
HOWE MACHINERY
DEPT. W1, Gregory Ave.
Passaic, N. J.

BUY DIRECT FROM FACTORY — SAVE AS MUCH AS 80% — POWER TOOLS

GUARANTEED TO DO THE WORK OF $40, $60, $100 UNITS

★ RUGGED AND VERSATILE
★ PROFESSIONAL QUALITY
★ LIFETIME ENGINEERED

REVOLUTIONARY PATENTS DECREASE COSTS, INCREASE EFFICIENCY

Top quality full scale power tools of heavy duty 100% cast iron and steel. Streamlined design reduces weight, cuts material and production costs. Special patents provide added efficiency, accuracy, savings. Nothing left out but exp've gingerbread. Parts made, assembled, tested, packed in our own factories, shipped direct. No store profits, to add to cost.

8" TILT ARBOR POWER SAW KIT

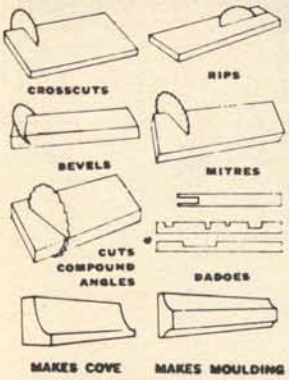
$9.95 f.o.b. factory

Wt: 12 lbs.
If desired, for easier work alignment: RIP FENCE, $3.50 add'l.

KIT INCLUDES: • Complete blade carrying mechanism with depth of cut control • Ground spindle with saw flanges • Pre-oiled bearings • Angle of tilt control • Mitre gauge • Motor mount assembly • Attractive steel front control panel • All needed brackets, screws nuts, bolts • ABC assembly plans • Patterns for sturdy base, massive 20" x 24" table • Full instructions

UNCONDITIONAL 10 YR. GUARANTEE

GUARANTEED TO DO THE WORK OF $50 BENCH SAWS



SAVE BIG MONEY ON HOME IMPROVEMENTS, SHELVES, CLOSETS, FURNITURE, TOYS

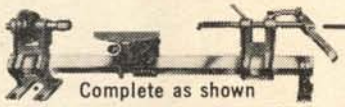
Put together in jig time. All you need are household tools, ½ sheet ⅜" plywood for table and base. Revolutionary new patents. **Table stays level, blade tilts.** Motor mount takes standard ¼ h.p. or larger motor, keeps belt tight: full power, perfect alignment any angle. Blade tilts, locks securely any angle to 50°; raises, lowers 0"-2¼". Takes standard 8" blade, dadoe heads, cutters, etc. (not incl.).

IT'S FUN! IT'S EASY! Save big money when you buy, save big money when you use. Use for 10 days. Put through most rugged tests. If not satisfied, return for full refund.

6" SWING 3-FT. LATHE

$9.85 f.o.b. factory

Optional Faceplat for turning bowls, trays, lamp bases, rosettes, etc. $2.50



Complete as shown

DOES THE WORK OF $40 UNITS— Sturdy all cast iron power tool turns wood or plastics with the precision and speed of machines selling for 4 times as much. Tubular steel bed, ball thrust cup center, spur center. T-Rest assembly, lever action tail stock. 2 speed pulley. Fits any motor.

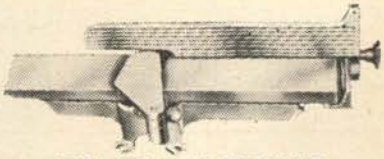
UNCONDITIONAL 10 YR. GUARANTEE

PROVED BY MORE THAN 500,000 USERS

FULL 22" LONG, 4⅛" JOINTER-PLANER

$19.95 F.O.B. Factory Complete as shown

100% precision ground cast iron and steel.



DOES WORK OF $60 UNITS

Now, at little more than a hand tool price, a guaranteed professional quality precision machine which does same work as skilled hand planing . . . much faster, more accurately. Make accurate glue joints; rabetting cuts for doors, window frames, table drawers; square taper cuts for chair legs; accurate beveling.

• Precision ground cast iron tables, adjustable for depth of cut • Rigid cast iron base • New patent-pending design holds clearance between knives and tables at any depth • Rabett depth ⅜" • Hardened, ground high speed steel knives • Patent-pending fence adjustable to any position, any angle 0°-50° • Patent pending lift-off guard (nothing to loosen!) • Balanced steel cutter head. UNCONDITIONAL 10-YEAR GUARANTEE.

DELUXE BALL BEARING WOOD SHAPER KIT

$14.95 f.o.b. factory

Complete less wood parts, motor
Hold-down assembly optional—$2.75

DOES WORK OF $100 UNITS

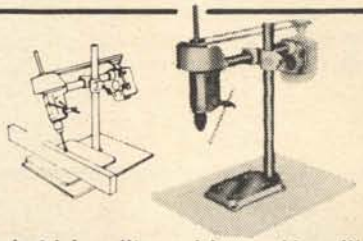
Makes decorator edges on furniture, forms beads, coves, moldings, tongue-in-groove joints, etc. A-B-C plans make assembly a breeze. Everything incl. but plywood for table, skirt. Greased-for-life ball bearings in sealed cast iron housing; fully adjustable, easily accessible cutter height control, fence assembly. Precision-machined for smooth, accurate cuts at high speed. Takes ¼ h.p. or larger motor, standard cutters avail. at Sears, other retailers. **UNCONDITIONAL 10-YR. GUARANTEE.**

32" RADIAL DRILL PRESS

$29.95 F.O.B. Factory

½" Cap. Gear Chuck Inc.
Shipping Wt. 30 lbs.

DOES WORK OF $90 UNITS . . . AND A GREAT DEAL MORE



Industrial quality precision machine with all features of standard drill press, many extras. Head raises, lowers. Greatly increased depth of throat. Can be pre-set to any angle or position for on-or-off table drilling . . . even horizontal drilling. All cast iron and steel. UNCONDITIONAL 10 YEAR GUARANTEE

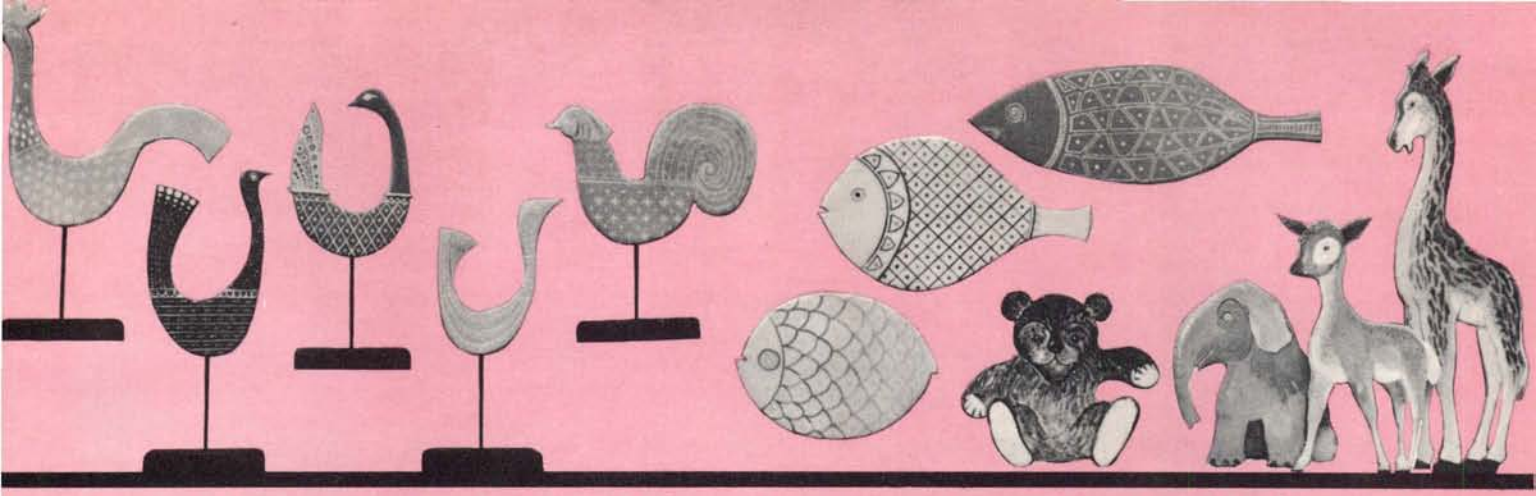
MAIL COUPON TODAY!

American Machine & Tool Co., Dept. WB-13, Royersford, Pa.
Please send me the units checked. Payment in full enclosed $..... or $3 deposit each item enclosed, balance C.O.D. ☐ **I must be fully satisfied or will return unit within 10 days for full refund. No questions asked.**

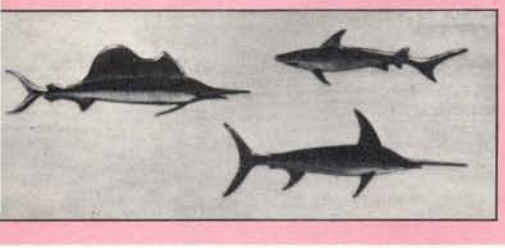
☐ Jointer-Planer $19.95 ☐ 8" Saw Kit & Rip Fence $13.45
☐ 8" Saw Kit $9.95 ☐ Lathe & Faceplate $12.35
☐ Lathe $9.85 ☐ Drill Press $29.95
☐ Shaper Kit $14.95 ☐ Shaper Kit & Hold-down $17.70

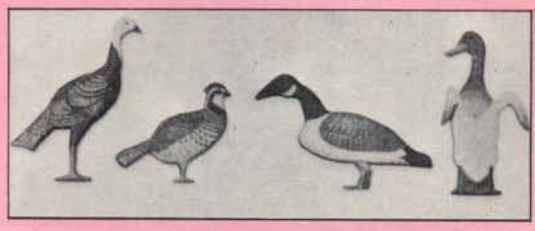
NAME .....
ADDRESS .....
CITY..... ZONE..... STATE.....
(please print)

10 DAY MONEY BACK GUARANTEE
You must be satisfied or money refunded.
AMERICAN MACHINE & TOOL COMPANY
Dept. WB-13, Royersford, Pa.



These are wood cut-outs. You can buy them or cut the designs yourself. We'll show you how to color them and apply the ceramic-like Castoglas finish. The examples shown above and below are part of a collection being offered for the first time. This is a truly exciting project and you can easily adapt the basic method to your own ideas.

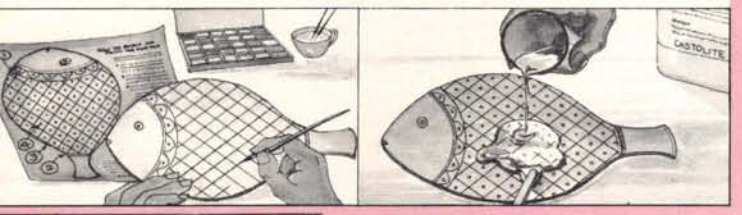




YOU CAN MAKE ALL THESE YOURSELF

For your Home, For Gifts, For Extra Money

The entire family will enjoy handcrafting these delightful stylized birds, zoo animals and authentic fish and bird designs. They are fun to make and to use to decorate the children's room, the kitchen and dining room, the den and recreation area, and the living room as well. You can make all of the things shown on this page in your own kitchen or home workshop. Scissors, knife, brush, spoon . . . these are the only tools needed. No heat or pressure is required. Materials for individual items cost as little as twenty cents. The sketches below illustrate the simple method of applying the colors. The Castoglas is poured over the top. It hardens within one hour.



THE CASTOLITE PROJECT BOOKLETS SHOW YOU HOW

We supply the materials and step-by-step illustrated directions. Order just one or all of the following booklets at the modest cost of 25¢ each.

- ☐ How to Laminate Decorative Glass Panels 25¢
- ☐ How to Cast Colorful Nature Tiles 25¢
- ☐ How to Design Your Own Art Tiles 25¢
- ☐ How to Draw and Color Cut-Outs 25¢
- ☐ How to Use Castolite Liquid Plastics 25¢
- ☐ How to Earn Extra Money in Spare Time 25¢

The entire project series contains over 400 photographs. For only One Dollar, we'll send you all six booklets, postpaid. You must be completely satisfied or you may return them within 10 days for a full and immediate refund. That's a promise! Please mail your remittance to Dept. A-9,

THE CASTOLITE COMPANY • Woodstock, Illinois

HOW TO MAKE YOUR OWN NATURE TILES WITH COLORFUL LEAVES

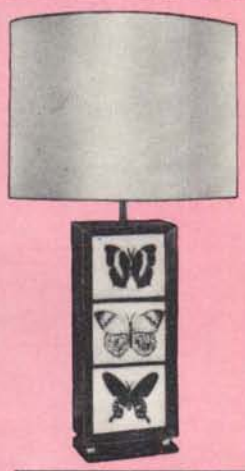
Flowers, Butterflies, Permanently Embedded in Castoglas

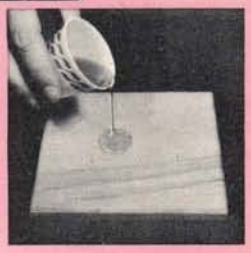
Pours Like Honey — Sets Like Glass!

In 1940 we embedded some brightly colored fall leaves in crystal-clear Castolite. Today—more than 20 years later—they are as colorful as they were on that October day of long ago when we picked them from the maple tree. NOW a greatly simplified method enables you to do the same with Castoglas on wood, hardboard or between layers of spun glass mat.

How These Tiles Are Made is illustrated in the five photos below: (1) Press fresh leaves between the pages of a book or magazine for a few days. (2) Pour Castoglas on a clear wood tile. (3) Place the leaf into the wet resin which will harden within 60 minutes at room temperature. (4) A covering coat of Castoglas completes the simple process. (5) The surface of the finished Castoglas tile is waterproof and heat- and acid-resistant. It is easily cleaned.

What Can You Do With Them? Use them for coasters, trays, table tiles, wall decorations, bookends, to name just of a few logical applications.





New Rubber Stamp Business Pays Beginners UP TO $9.20 an hr.

START AT HOME IN SPARE TIME WITH THIS LITTLE TABLE TOP MACHINE

The multi-million dollar Rubber Stamp Business—once controlled by a few big companies—is now being taken over by small home operators—one in each community throughout the U. S. Men and women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to order from big cities. Material costing only 27¢ makes a stamp that sells for $1.80. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by factories, offices and individuals. Working full capacity, it can earn as much as *$9.20 an hour for the operator!* Now you can get into the big-pay business yourself with your own home as headquarters. You don't need any experience. We supply everything, including complete instructions and eight ways to get business coming in fast. We even help finance you. Cash in on the profitable Rubber Stamp business. Start making up to $9.20 an hour from the very beginning.

TAKES UP ONLY 2 SQUARE FEET OF SPACE

WE HELP FINANCE YOUR START IN BUSINESS

●●● Read the complete and fascinating Rubber Stamp story in a big 110-page Book. The book is profusely illustrated with more than 100 pictures and photographs. *And you can read it for a full two weeks without risking a penny of your own money!*

NEW WARNER SUCCESS PLAN

Tells How to Build—Step by Step—to Big Profits and Personal Independence. ***Read This Plan for Two Weeks Entirely At My Risk!***

In this amazing Plan you will find exact and detailed instructions for starting a Home Business in spare time — without giving up your present job and without risking the loss of a single pay check. The Warner Plan shows you—with pictures, photographs and drawings—just how to make Rubber Stamps just as good as those turned out by the big companies. It shows how to get orders *without canvassing or house-to-house selling.* It shows you how to expand, how to get others to work for you and how to be SURE of at least twice the money you make on your present job for a life of personal independence.

RUBBER STAMP DIVISION
1512 Jarvis Ave., Dept. R-6-A, Chicago 26, Ill.

But don't make any decision now. Read the Plan first—entirely at my risk. Then—after you have made a careful investigation—after you have talked things over with your family—only then do you decide what you want to do.

ALL FACTS FREE

Get full details which I'll send you FREE no salesman will call to urge you to buy anything. Mail coupon now—or just send a postcard—and I'll see that complete information including plan for financial help goes out to you by return mail.

Here's what the new WARNER PLAN Tells You about Making Money

1. **HOW TO** have fun ***now*** and at the same time provide for a secure and prosperous ***future.***
2. **HOW TO** check the advantages of operating a Rubber Stamp Business in your own community.
3. **HOW TO** acquire a general knowledge of the business based on a brief history of the Rubber Stamp.
4. **HOW TO** visualize the scope of the Rubber Stamp market.
5. **HOW TO** make a Rubber Stamp (general outline).
6. **HOW TO** assess the value of Warner Equipment.
7. **HOW TO** get acquainted with the "Tools of your Trade."
8. **HOW TO** make a Rubber Stamp (Specific procedure).
9. **HOW TO** mount a vulcanized Rubber Stamp.
10. **HOW TO** *make "Special"* Rubber Stamps.
11. **HOW TO** cut plastic Matrix Board for the chase.
12. **HOW TO** get the right price for the Rubber stamps you make.
13. **HOW TO** price your complete Rubber Stamp Line.
14. **HOW TO** set up your workshop.
15. **HOW TO** get the most out of Warner's "Eight Tested Sources for Getting Business."
16. **HOW TO** get started on a cash outlay so small that *you can get back your entire investment inside of two weeks.*

YOUR NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

FIRST CLASS
Permit No. 34316
Chicago, Illinois

BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

Postage Will Be Paid By

RUBBER STAMP DIVISION
1512 Jarvis Ave. Chicago 26, Illinois

Dept. R-6-A

No Stamp Needed

Cut Coupon on dotted line. Fill in name and address.

●

Drop in Mail Box. No Stamp Needed